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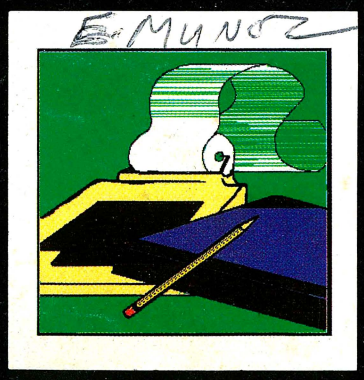
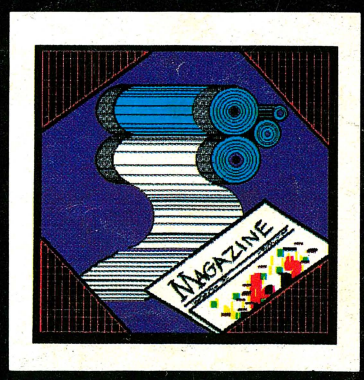
EPSON WORLD

THE MAGAZINE OF PRACTICAL APPLICATIONS

MAKING MONEY WITH YOUR COMPUTER





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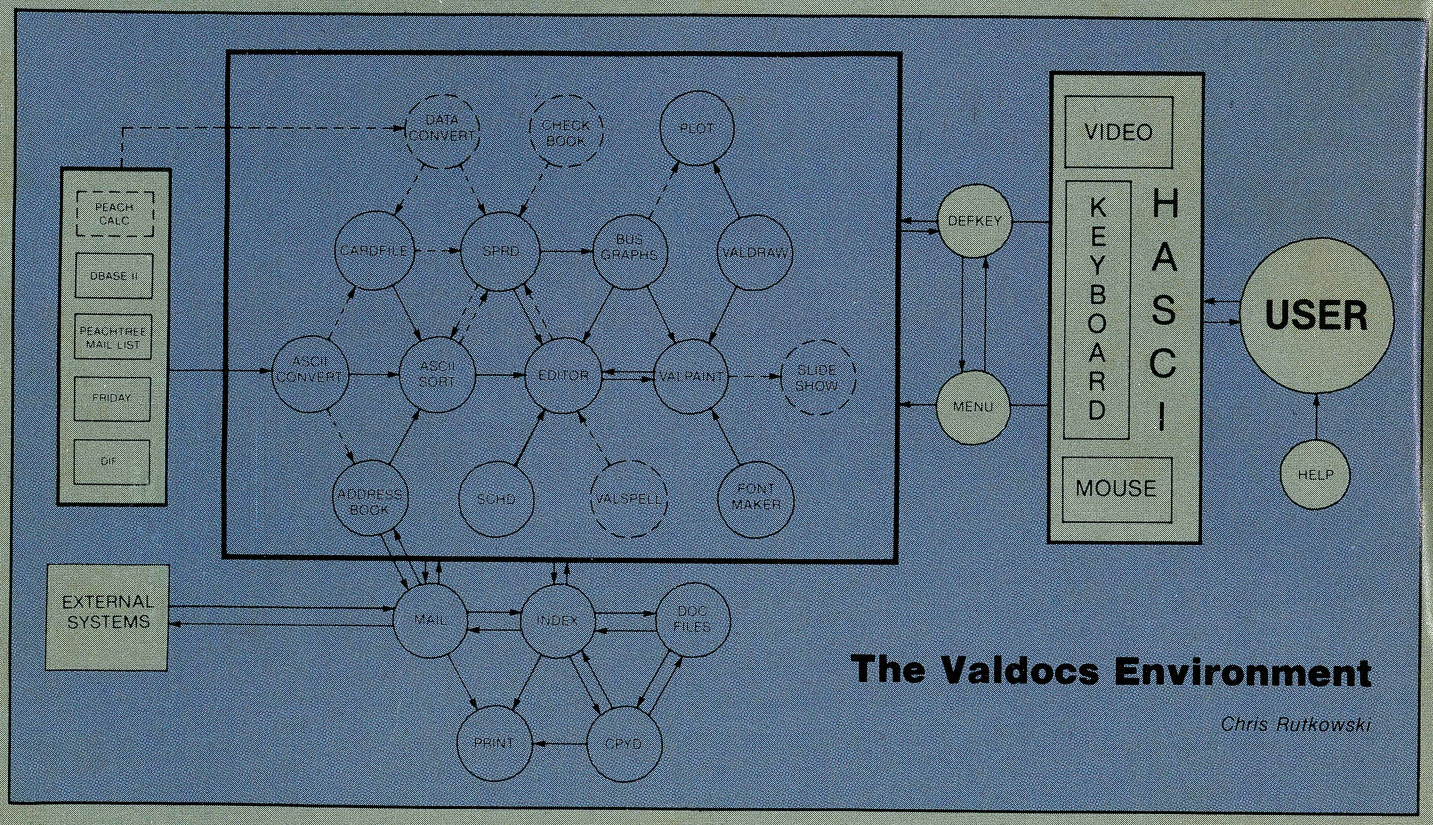
Rising Star Industries Announces its

VALDOCS+™



The Valdocs Environment

Chris Rutkowski

Valdocs® started out as an impossible dream, described in the September and October 1982 issues of BYTE magazine. Then Valdocs 1 proved integration and ease of use could co-exist on a micro. Valdocs 2 added features and provided a platform upon which to build. And finally the dream becomes reality for most users: Rising Star announces *Valdocs+*.

Valdocs+ offers *data integration* — the ability to pass data among modules. It offers *faster operation* in both the editor and spreadsheet. And it offers a feature never before seen in an easy-to-use integrated system: *programmability*.

Do it yourself Mail Merge

Using the Valdocs Editor's sensational new "Multiple Lookfor and Replace" capability, data from the Addressbook and Cardfile (as well as data from Peachsoft's List Manager, DIF files, DBASE II and FRIDAY) can be sorted and merged with normal text documents. And because the data is actually merged into the editor, documents are fully reformatted, can be micro-space justified, make full use of fonts, and can be combined with graphs, charts and illustrations, etc. Most amazingly, *Mailmerge,* usually a separate program, is actually programmed *by the user* as a DEFKEY macro. This is only a sample of the programmability that will be introduced in Valdocs over the next few months.

Graphics in Text

Want to insert a business graph, spreadsheet or painting into your editor document? Easy. With the picture on screen, press the EDIT key. Pass spreadsheet data to the editor? No problem. Press EDIT. It is no more difficult than chaining from one module to another. As an example of a useful application, use PAINT to make a copy of your company logo, then put it at the beginning of one of the Valdocs editor's 8 *default documents:* instant letterhead! Available *anytime* with only 4 keystrokes.

Valdocs: More than just a program.

Valdocs is more than a program— it's a *programmable environment.* In the accompanying chart you can see, for the first time, the planned scope of that environment. Solid lines represent modules or integration paths *already* present in Valdocs+. Dotted lines represent modules and integration paths which will be completed and implemented during the next few months. Look it over. *NO integrated system offers as much versatility as Valdocs+.*

First Independent Release of Valdocs®

The Programmable Environment©

Software Buying Simplified®

In celebration of the release of Valdocs+, Rising Star is launching the most innovative marketing program ever seen in the software industry — Software Buying Simplified.

The entirety of the Valdocs Environment as it now exists, and every enhancement and improvement depicted in the chart is available for the low package price of $349.-

There are *no* strings attached. No extras. No handling or update charges. *Every* new or revised module we develop, *every* new program, *every* new feature and *every* bit of documentation written will be sent out to all registered Valdocs+ users at least once every 60 days until the Valdocs Environment as outlined for the QX-10 and the QX-16 are *done.*

Guaranteed enhancements include *ValSpell* (an integrated spell checker and thesaurus), *ValCheck* (an electronic checkbook integrated with the Spreadsheet), *Slideshow* (for presentation graphics), Valpaint 2 (with built-in Hershey Fonts), *Valdraw 2* (greatly improved accuracy and a host of new features), plus much more in the way of Editing, Spreadsheet and integration features.

You even have options on how to purchase

First, as described above, you can purchase the entire Valdocs Package for $349.00 (without a mouse) or $449.00 (with a mouse). In addition, anyone buying this package will receive a $49.00 discount if they have already bought Valdocs 2.

Attention Valpaint/Valdraw owners!

If you have already purchased Valdraw and Valpaint, and sent in your warranty registration card, you can purchase the entire Valdocs package as described in this Ad for a one time fee of $49.00 to cover the costs of media, distribution and documentation. It's our way of saying "Thanks for the on-going support."

Second: Summer vacations or back to school expenses left you a bit short on cash? We've got you covered. Now, for the first time you can make your software purchase on the *installment plan.* Under this plan credit card customers can purchase the Valdocs package with a mouse for $78.50 at the time of purchase and $78.50 a month for six months.

Third: You can always continue to purchase our products as you have in the past, a module or program at a time. Bought this way, Valdocs+ (without Valdraw, Valpaint, Dictionary or other planned enhancements) is available for only $249.00, with a $49.00 discount if you have already bought Valdocs 2. Prices of other products will be as published elsewhere.

A MONEY BACK GUARANTEE on Applications Software!

VALDOCS' MONEY BACK GUARANTEE: If you find and report a reproducible bug* in VALDOCS+ within 90 days of purchase and we cannot fix** it within 60 days of your report, Rising Star will refund your money upon request.

*A bug is defined as any deficiency in the program code which results in that program failing to perform a function for which it was designed, in the manner intended by its designers. Limitations inherent in the computer or peripheral hardware will not be considered bugs.

**A fix is defined as code corrections which result in the program performing the function for which it was designed in the manner intended by its designers.

All reports must be made in writing to Rising Star's Customer Services Division and must be sufficiently detailed to allow the bug to be reproduced by Rising Star personnel.

This guarantee applies to Rising Star Industries' software products which are part of "VALDOCS+" which are licensed for use directly from Rising Star between September 1, 1985 and 1 March 1986 and supplements the terms of the license under which you acquired the software. All other terms and conditions of the software license remain in full force and effect.

This guarantee is activated upon receipt by Rising Star of the signed warranty registration card you receive with each Rising Star product.

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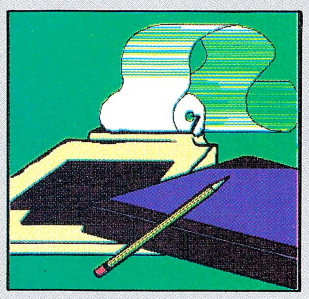
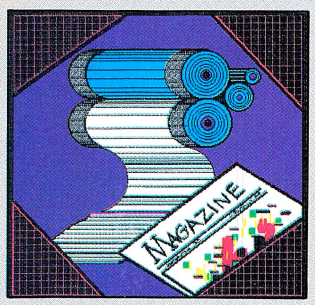
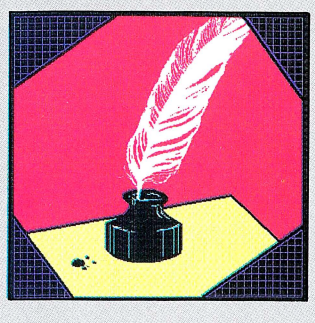
Circle 23 on Reader Service Card

EPSON WORLD







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INTERACT '85. INTERESTING, BUT INTERESTED?

Epson's Interact '85 left me with mixed emotions. As usual, everything was well done, and attendance was virtually full house.

But I was concerned by Jack Whalen's introductory speech, not what he said, but what he didn't say. "Epson will be in business forever."I would have felt better if he'd said, "Epson will be in the *retail computer business* forever."

A company like Epson can market several ways. It can sell to large customers under special order (Original Equipment Manufacturer — OEM); configure for special applications (Value Added Reseller — VAR); or sell straight retail.

The first two methods might mean single sales of hundreds or even thousands of units. Highly efficient. But the retail market, where we live, means big manuals and lots of support. Costs of all this are reflected in the prices we pay. And we're the ones who'll lose if Epson phases out of the retail market.

There are warning signs that Epson may be moving away from retail. The early HX-20 and Geneva PX-8 portables sold very little at retail, but have been successful for VARs. Last year, Epson brought out several VAR variations of Geneva.

The latest Epson, the QX-10 mutation running MS-DOS and called QX-11, is designed solely for VARs.

It seems to me Epson's losing interest in the desktop retail computer market, and nothing said at Interact '85 indicated otherwise.

P.S. Word just in: Epson will announce a new desktop computer in September. Sales, through retail channels, contradict my fears above! Details of this and Epson's renewed commitment in our next issue.

J.H.

EPSON WORLD OF ART

The contest is on. The competition is rugged. But there's still time.

We announced the Epson World of Art contest in our Spring issue. Since then, we've received a number of outstanding entries, but there's still room for yours.

Send your entry or entries to Epson World of Art, Highland Mill, Camden, ME 04843. Deadline is October 1. One rule: Use an Epson computer to create your art.

Show the world what can be accomplished with a fine mind and a fine computer.

R.S.

VALDOCS+ FROM RISING STAR

Rising Star Industries announced programmable Valdocs+, the company's first product since becoming independent of Epson, just as we went to press. We didn't have time to review it, but RSI says that "finally the (Valdocs) dream becomes reality" with this release. A "Multiple Lookfor and Replace" capability sorts and merges data from Peachsoft's List Manager, DIF Files, dBase II and Friday into text documents. Also with Valdocs+, Mailmerge can be programmed by the user as a DEF-KEY macro.

Rising Star is announcing Valdocs+ with an ad elsewhere in this issue of Epson World. We'll have further editorial coverage in the next issue.

R.S.

LONG DISTANCE OPERATOR

Another day, another country.

You're going to see the director of a large international pension fund, and you need a little insight. Good thing you've got your Epson® Geneva™ portable computer. At your hotel in Stockholm, you use the Geneva to call up the Wharton Econometric World Service Historical Data Base. The optional Geneva modem and software do all the talking. If they don't have what you need, one of 2,000 other public data bases will. With new information and Geneva's word processing software, you fine-tune your presentation.

The director wants predicted rates of return for his investments. You model the rates with Geneva's spreadsheet software, and get hard copy from its optional battery powered printer. Because the Geneva is an international machine, you run it out in the Swedish character set, complete with punctuation. The director is delighted. You make the deal, sending a copy to your IBM® PC back in New York.

At the airport, you use the Geneva to check the currency exchange rates. Next stop, Rome, where your money may not be worth as much, but your expertise is.

With a massive software library and a complete line of system peripherals, the Epson Geneva PX-8™ portable computer can handle any job, anywhere. And for less than $1000. For more information, call 800-421-5426 or 213-539-9140 in California.

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SCREEN DUMPS FROM RSI BASIC

Have you ever wanted to do a screen dump under program control? If you are running MBASIC and CP/M, there may be a way, although we haven't seen it, but if you have RSI BASIC, there is a simple way to copy a screen to your printer from inside a BASIC program. Both graphics and character screens can be "dumped".

Any screen can be printed from RSI BASIC by CALLing a machine language subroutine. Graphic screens (screen 1 in non-color computers) have to be sent to an Epson dot matrix printer, otherwise nothing but gibberish will be printed. Character screens (normally screen 2 of monochrome computers) can be printed on any type of printer.

We are going to present two ways of doing screen dumps. Which is for you? If you have the first release of RSI BASIC (your manual is not typeset), then you'll have to add the three lines of code shown in Figure 1 to your existing BASIC program. If you have the second release (which should be available by the time you read this), simply add the line of code shown in Figure 2.

Those of you with the first release of RSI BASIC will need to take care if you are using other DATA statements in your program. Line 100 loads a short machine language program read from the data shown in line 110. Before running line 100, then, be sure that you set the data pointer to line 110 (or whatever line number you have given it) using the RESTORE statement prior to executing line 100. After executing line 100, be sure to reset the data pointer to whatever line number you want.

Another caution: Make sure that you type the data shown in line 110 exactly as shown; do not split it between two or more lines.

Of course the line numbers shown in our examples are for illustrative purposes only and these BASIC lines can be placed anywhere in your program as desired. The only requirement is that when using the first release of RSI BASIC, line 100 has to be executed to install the machine language routine before you make the call shown in line 500 to evoke a screen dump.

Figure 1. Screen Dumps

These program lines enable screen dumps to take place, and must be executed before you attempt a screen dump. Be sure to RESTORE the data pointer to line 110 before executing line 100, then set it back where it belongs:

```
100 READ A: WHILE A=>0: A$=A$+CHR$(A): READ A: WEND
110 DATA 6,1,&21,0,0,&C3,5,0,-1
```

Note: The above line 110 causes "normal" screen dumps to take place; if you want a "reverse" screen dump, change line 110 to read:

```
110 DATA 6,1,&21,1,0,&C3,5,0,-1
```

Execute the following line of code to perform a screen dump under program control:

```
500 B=VARADR (A$): ADR=PEEK (B+2)+256*PEEK(B+3): CALL ADR
```

Figure 2. Normal Screen Dumps

"Normal" screen dumps can be printed from the second release of RS1 BASIC by performing the following line 500. No extra BASIC code is required.

```
500 CALL 5,296,0,0
```

"Reverse" screen dumps use this call:

```
500 CALL 5,296,0,1
```

A BASIC Memory Dumper

The short MBASIC program in Figure 3 was written by Russ Pillsbury, author of RSI BASIC, to "dump" the memory of his HX-20 portable computer. Although written for the HX-20, this program can probably be run on any computer supporting a reasonably "standard" BASIC.

A quickie program, it has virtually no user interface. Those of you who want to expand it can easily add features to this debugger core. And should any of you "techies" build on this or have a BASIC debugger of your own you'd like to share, we'll find room for it in a future issue of Epson World.

Not everyone will have an interest in this sort of program, but it is an excellent example of tight BASIC code. Use and study it as a training exercise. Notice how the hex conversions are done, how the line ends are detected. Some reasonably elegant code will be discovered along with some nifty little

tricks.

This program provides two types of dumps. The "D" dump displays the address, four two-digit hexadecimal values read from memory, then the ASCII translation of those four values. All this neatly fits across the HX-20's display screen. The "T" dump prints an address followed by the ASCII representation of the contents of the following 16 memory locations. These, of course, spread across and past the right margin of the HX-20 display.

Operation of the program is simple. After loading or typing it into MBASIC, type RUN. At the prompt, enter the option character (D or T) followed by the hexadecimal value of the starting memory location that you want displayed, ended by a carriage return. Two examples: T100<CR> and D3F77<CR>. The program runs, listing the memory, until it is stopped by pressing the BREAK key.

```
1   REM Copyright 1985 by Russ Pillsbury
2   REM This program for personal use only and may not be sold
3   REM without prior written consent of the author.
10  GOSUB 150
20  INPUT A$:TY=0:IF LEFT$(A$,1)="T" THEN TY=1
30  AD=VAL("&H"+MID$(A$,2)):AS=AD
40  TN=4: IF TY THEN TN=16
50  PRINT FNA$(AD);" ";
60  IF TY THEN 110
70  PRINT FNB$(PEEK(AD));
80  AD=AD+1
90  IF AD MOD 4 THEN 70
100 PRINT " ";
110 A=PEEK(AS):IF A<32 THEN A=&H2E
120 PRINT CHR$(A);
130 AS=AS+1:IF AS MOD TN THEN 110
140 PRINT:AD=AS:GOTO 50
150 DEF FNA$(AD)=STRING$(4-LEN(HEX$(AD)),"0")+HEX$(AD)
160 DEF FNB$(AD)=STRING$(2-LEN(HEX$(AD)),"0")+HEX$(AD)
170 RETURN
```

Figure 3. A BASIC Memory Dumper

Controlling Your CR-II Printer

Steve Hudgik, author of The Home Money Manager, sent us a note about using the Comrex CR-II printer and how it can be controlled using the OUT command in PeachText. (As far as we know, this can't be done from Valdocs because it doesn't allow control codes to be sent to your printer.)

"The Comrex CR-II is a versatile printer and I am yet to come up with a printing problem that my CR-II has been unable to do. However, at times it is tough to figure out how to get a particular CR-II function to take place. One that puzzled me for quite awhile (and had my dealer completely stumped) was how to get it to print in red.

"The CR-II is a good printer that is easy to use with both Valdocs and PeachText. It is capable of performing all of the functions normally expected of a daisy wheel printer and all of the specialty functions in PeachText. Being "code compatible" with the Diablo 630 printer, it supports bold face, super and subscripting and inter-character justification. I'm not going to go into how to use these functions since they are covered with the manuals provided with PeachText. However, none of then tell you how to print in red.

WANT TO KNOW A SECRET?

"The secret to all of the CR-II capabilities is the use of Escape Sequence Function Codes. These codes control all of the "fancy" internal features of the printer and are sent to the printer via PeachText's OUT command. Escape Sequence Function Codes are not complicated or difficult to use, but with a name like that it sounds like you may need to be a programer. Not so!

"All we mean when we say Escape Sequence Function Codes is that we combine the decimal ASCII character code for ESCAPE (ASCII character code 27) with the decimal ASCII character code for some other symbol that is recognized by the printer and controls some function.

"The PeachText OUT command lets you directly control the functions of your CR-II by sending it decimal ASCII code values for the Escape Sequence Function Codes. All of the Escape Sequence Function Codes used by the CR-II are listed in the CR-II manual in HEX code. These values have to be converted to decimal before they can be used by PeachText.

"For example, the CR-II manual gives 1B,41 as the HEX code to start printing in red. The decimal values for these codes can be found in Appendix C of the Microsoft Basic manual a convenient place to look up ASCII code values. In this case HEX 1B,41 (to select red printing) becomes a decimal 27,65. Thus OUT27,65 will select the red ribbon, and the printer will continue to print in red until it sees HEX code 1B,42 (OUT27,66) which returns the black ribbon to use. Also, I should mention that the OUT command must be at the end of a line of imbedded commands or on a line by itself.

"Some of the Escape Sequence Function Codes, such as HMI set (Horizontal Movement Increment set) require three numbers. The third number, shown in the CR-II manual as "n", sets the amount plus 1. For example, for HMI OUT27,31,11 will set the printer head to move $^{10}/_{120}$ (n-$^{1}/_{120}$) of an inch per character. This results in 12 characters per inch. Of course it's usually easier to remember CPI12 as the way to set 12 characters per inch in PeachText, so I don't see that this Escape Sequence Function Code is very useful. These are only four CR-II functions that I've found can not be set by normal PeachText commands, and require use of the OUT command to control:

- PRINT SET -(OUT27,63) -sets the printer to use the red ribbon.
- PRINT BLACK -(OUT27,64) -sets the printer to use the black ribbon.
- AUTO UNDERLINE -(OUT27,69) -sets the printer to underline characters, but not spaces.
- VERTICAL TAB -(OUT27,11,n) -can be set to move the paper by a set amount (n-1 lines) when the vertical tab control code (OUT11) is received.

CONTROL CODES

"This brings us to the subject of control codes. Control codes are special non-printing characters that control a

given printer function. They are sent directly to the printer using the OUT command as described earlier. For example, you can ring the bell on your printer by entering /OUT7 as a part of the text being sent to the printer.

"ESCAPE SEQUENCE FUNCTION CODES and control characters can also be sent to your printer from MBASIC through the combination of the LPRINT and CHR$ functions. MBASIC allows only one ASCII character code to be sent with each CHR$ statement. The CHR$ functions can be chained together to form Escape Sequence Function Codes using the plus (+) symbol. For example, the following sets th be sent with each CHR$ statement. The CHR$ functions can be chained together to form Escape Sequence Function Codes using the plus (+) symbol. For example, the following sets the CR-II to print in red:

```
10 LPRINT CHR$(27)+CHR$(65);
20 END
```

"The semicolon at the end of line 10 is important. Without it the paper will advance one line, in addition to being set to print in red, causing misalignment of your printout.

"Once the CR-II is set to print in red it will continue to print in red until either black printing is selected or the printer is reset using the ASCII code sequence 27,13,80. Thus you can use this short basic program to set red printing, then go to Valdocs and print a document or a portion of it in red.

"You can also use the LPRINT CHR$(I) function to print any symbol available on your daisywheel at any point on the paper in any sequence. Characters can be printed as close as 1/120 of an inch together and the paper advanced (or moved backward) in 1/48 of an inch increments. I encourage you to experiment and try the different Escape Sequence Function Codes and Control Functions given in your CR-II manual.

PROGRAMMING HELP

"The following MBASIC program (shown in Figure 4) illustrates what a CR-II can do when properly controlled. This program almost makes your CR-II seem like a two color plotter. The code is not clean as it could be because I wanted to show the use of as many Escape Sequence Function Codes as I could. I think you'll enjoy the control over your CR-II this program demonstrates ... keep an eye on the printer as this one runs."

We'd like to add that you can control *any* printer using the techniques

Figure 4. CR-II Printer Control/IE

```
1Ø  REM PRINT A GRAPH
2Ø  DIM A(5)
3Ø  LPRINT CHR$(27)+CHR$(13)+CHR$(8Ø)
4Ø  LPRINT CHR$(27)+CHR$(3Ø)+CHR$(8)
5Ø  FOR I=1 TO 2Ø
6Ø  LPRINT TAB(5)"|":NEXT I
7Ø  LPRINT CHR$(27)+CHR$(1Ø);
8Ø  FOR I=1 TO 4Ø:LPRINT TAB(4+I)"_";
9Ø  NEXT I
1ØØ FOR I=1 TO 2Ø:LPRINT CHR$(27)+CHR$(1Ø);
11Ø NEXT I
12Ø LPRINT TAB(3)"1Ø-":LPRINT
13Ø FOR I=9 TO 1 STEP-1:LPRINT TAB(2)I"-":LPRINT
14Ø NEXT I
15Ø LPRINT CHR$(27)+CHR$(68);
16Ø FOR I=1 TO 8:LPRINT TAB(I*5+5)"|";
17Ø NEXT I:K=78
18Ø FOR I=1 TO 8:K=K+1:LPRINT TAB(I*5+2)K;
19Ø NEXT I
2ØØ LPRINT:LPRINT TAB(2Ø)"Y E A R"
21Ø FOR I=1 TO 16:LPRINT CHR$(27)+CHR$(1Ø);
22Ø NEXT I
23Ø FOR I=1 TO 5:READ A$(I)
24Ø LPRINT  A$(I):NEXT I
25Ø LPRINT CHR$(27)+CHR$(68);
26Ø LPRINT CHR$(27)+CHR$(3Ø)+CHR$(3);
27Ø LPRINT CHR$(27)+CHR$(31)+CHR$(5);
28Ø K=11:GOSUB 34Ø:GOSUB 52Ø:GOSUB 4ØØ:GOSUB 49Ø
29Ø GOSUB 49Ø:GOSUB 46Ø:GOSUB 49Ø
3ØØ LPRINT CHR$(27)+CHR$(65);
3Ø1 K=K+1:GOSUB 49Ø
31Ø LPRINT CHR$(27)+CHR$(66);
32Ø DATA S,A,L,E,S
33Ø LPRINT CHR$(27)+CHR$(13)+CHR$(8Ø):END
34Ø FOR I=1 TO 15
35Ø LPRINT TAB(K+I)".";
36Ø LPRINT CHR$(27)+CHR$(68);
37Ø IF I<>1 GOTO 38Ø:K=11
38Ø NEXT I
39Ø K=K+I-1:RETURN
4ØØ FOR I=1 TO 15
41Ø LPRINT TAB(K+I)".";
42Ø FOR J=1 TO 2
43Ø LPRINT CHR$(27)+CHR$(1Ø);
44Ø NEXT J:NEXT I
45Ø K=K+I-1:RETURN
46Ø FOR I=1 TO 15
47Ø LPRINT TAB(K+I)".";
48Ø NEXT I:K=K+I-1:RETURN
49Ø FOR I=1 TO 15
5ØØ LPRINT TAB(K+I)"."
```

Continued on page 8

Continued from page 7

```
51Ø NEXT I:K=K+I-1:RETURN
52Ø FOR I=1 TO 15
53Ø LPRINT TAB(K+I)".";
54Ø FOR J=1 TO 3
55Ø LPRINT CHR$(27)+CHR$(68);
56Ø NEXT J:NEXT I
57Ø K=K+I-1:RETURN


NOTES ON PROGRAM OPERATION
    This program is will work best with the American
English Prestige 1Ø12 daisy wheel.
    The vertical line in program line 16Ø results
from hitting the degree key (shifted backslash ) when
you are using CP/M or GRPH SHIFT and the plus key if
you are running MBASIC under TPM-III.
    Line 3Ø:   Resets the printer so that any printer
settings from a previous program will not cause
interference.
    Line 4Ø:   Sets the vertical movement (VMI) of
the carriage to 7/48 of an inch (normal movement is
8/48").
    Line 7Ø:   Moves the paper backward.
    Line 15Ø:  Moves the paper backward by one-half
the VMI.
    Line 25Ø:  Moves the paper forward by one-half
the VMI.
    Line 27Ø:  Sets the horizontal movement of the
print head to 4/12Ø of an inch.
```

described by Steve. The thing to remember is that just about every printer uses a different set of codes (there is no standard) to control various functions and features. The most likely problem areas you will encounter are these:

- Remember that PeachText and most other text processors insist that control codes be entered as ASCII (decimal) numbers. Many printer manuals supply the control codes in hexadecimal only (such as the CR-II manual), but civilized printer manuals will supply both the hex and decimal values. Make sure you pick the decimal value.

- Misuse of the OUT command can be a real problem. Characters that are sent with this command are not counted as "real" characters on the print line, and so it is possible (in PeachText at least) to create a line length problem if the characters you send are printable.

- You can use the OUT command to print special characters on the printer that cannot be directly displayed on your screen. Just remember that these characters will be added to the print line without concern about the resulting line length; you may have to manually adjust it yourself after you see the printed results.

Valdocs 2 Editor Control Keys

Buried in the almost non-existent documentation for the Valdocs 2 editor are a few control keys that are useful when using the block commands. These control keys can be used instead of chasing through the BLOCK menus:

- CONTROL-Margin Release — Marks the beginning/end of a block.
- CONTROL-SHIFT Margin Release -Unmarks a block.
- CONTROL-RIGHT Delete -Deletes a block.
- CONTROL-UNDO -Copies a deleted block to the current cursor position.

Notice that you can move a block from one place in a document to another by simply deleting it from the original location, moving the cursor to the new place, then UNDO-ing the deletion with the CONTROL-UNDO. *N.B.* This only works if you haven't deleted something else after the block to be moved was deleted. It is a bit quicker than the menu-based block move, but must be used with caution.

Cables for the Epson Computers

It's not often you can walk into a dealer's showroom and get a cable by describing your needs. The list featured in Figure 5 has been provided by Epson to help you next time you need a cable for your Epson computer. If your dealer doesn't have it in stock, it can be ordered by cable number.

Cable #	Computer	Description
723	PX-8	PX-8 to P-80 printer
724	PX-8	PX-8 to CX-20 or modem
725	PX-8	PX-8 to computer
726	PX-8	PX-8 to PF-10 disk drive or PX-8
702	HX-20	HX-20 to audio cassette
706	HX-20	HX-20 to modem
707	HX-20	HX-20 to TF-20 disk drive
715	HX-20	HX-20 to serial printer
716	HX-20	HX-20 RS-232 port to HX-20 RS-232 port
717	HX-20	HX-20 serial port to HX-20 serial port
TCS4490	QX-10/16	QX-10 to QX-10 monitor
584	QX-10/16	QX-10 parallel printer cable
713	QX-10/16	QX-10 modem cable
8221	TRS-80	TRS-80 bus cable
8222	TRS-80	TRS-80 expansion cable
8232	Apple II	Apple parallel cable

Figure 5. Epson Cables and What They Do.

GIVE YOUR PRINTER A FACELIFT.™

Your printer manual probably shows a lot of faces that the printer is supposed to print. With lots of complicated instructions you don't have time to learn.

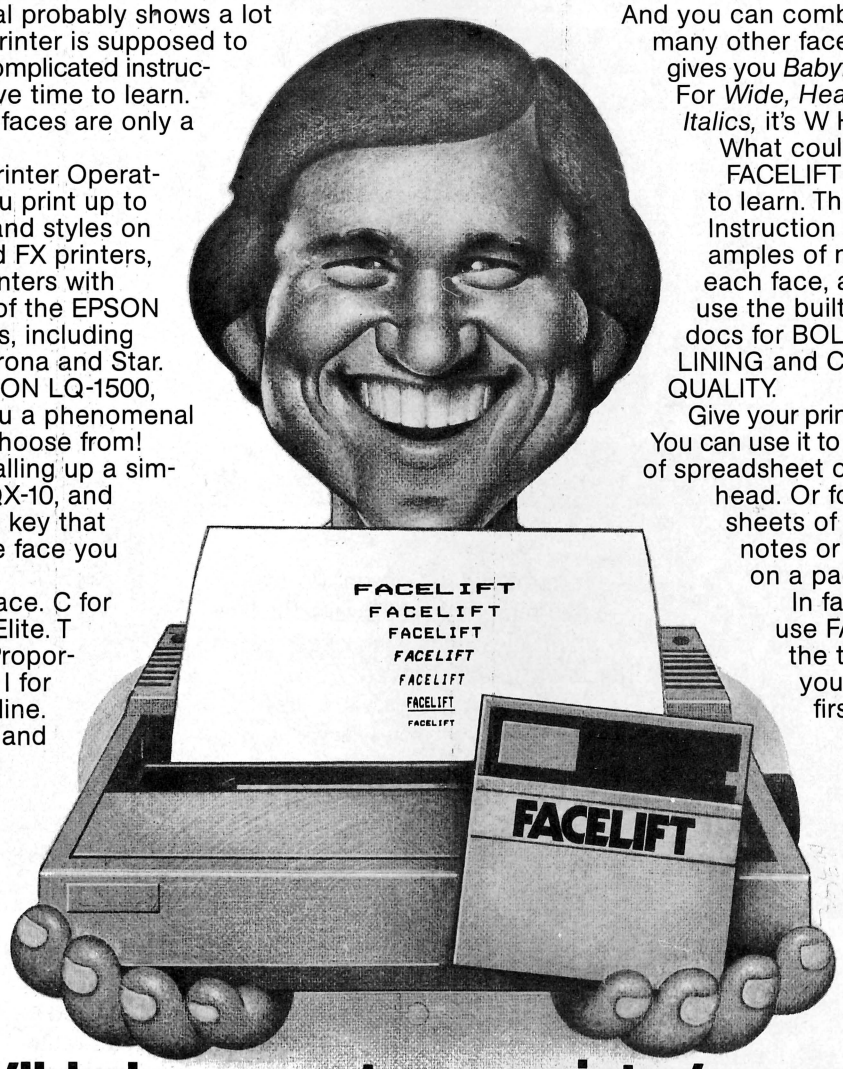
Well, now those faces are only a typing key away.

The FACELIFT Printer Operating System lets you print up to 92 different sizes and styles on the EPSON RX and FX printers, the EPSON MX printers with Graftrax, and any of the EPSON compatible printers, including Okidata, Smith Corona and Star.

On the new EPSON LQ-1500, FACELIFT gives you a phenomenal 416 typefaces to choose from!

It's as easy as calling up a simple menu on the QX-10, and pushing the typing key that corresponds to the face you want.

Like B for Babyface. C for Condensed. E for Elite. T for Trimline. P for Proportional. W for Wide. I for Italics. U for Underline. D for Doublestrike and H for Heavy.



And you can combine the above to get many other faces. For example, B I U gives you *Babyface Italics, Underlined.* For *Wide, Heavy, Doublestrike Italics,* it's W H D I.

What could be simpler?

FACELIFT takes only seconds to learn. The clear, easy-to-read Instruction Manual gives you examples of margin settings for each face, and tells you how to use the built-in commands in Valdocs for BOLD, ITALICS, UNDERLINING and CORRESPONDENCE QUALITY.

Give your printer a FACELIFT today. You can use it to get 12 month's worth of spreadsheet on to a normal letterhead. Or for printing on small sheets of paper, making footnotes or getting more words on a page.

In fact, you'll probably use FACELIFT for lots of the things you bought your printer for in the first place.

It'll help you get your printer's worth.

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Here's my $29.95 Plus $2.50 POSTAGE & HANDLING ($32.45 TOTAL)
(California Residents add 6.5% Sales Tax)
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(Make payable to Companion Software, Inc.)

Name_____
Address_____ Tel ( )_____
City_____ State_____ Zip_____
Signature_____ Date_____
Acct #_____ M.C. Interbank #_____ Exp. Date_____
Specify Computer Make and Model_____

FACELIFT, P.O. BOX 4339, WHITTIER, CA 90607 EC

FACELIFT is a trademark of Companion Software, Inc. VALDOCS is a Trademark of Rising Star Industries. EPSON is a registered trademark of Epson Corporation. Okidata is a registered trademark of Okidata Corporation. Star is a trademark of Star Micronics, Inc. Smith Corona is a trademark of SCM Corporation.

Circle 11 on Reader Service Card

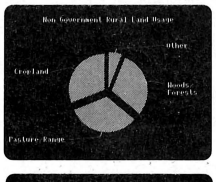
Epson announces the last thing you'd expect in a personal computer.

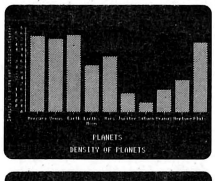
Permanence.

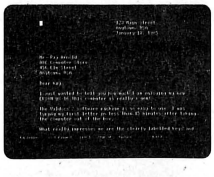
Introducing the Epson® QX-16.™ The computer that flies in the face of obsolescence. The computer you can look forward to productively using for years and years. Possibly your entire career.

No more worrying about software that won't work with hardware. Or technological advances that leave you behind. Or outgrowing a computer you've hardly used.

In short, no more worrying about obsolescence.







Valdocs® 2 is one reason. This unique, integrated software package from Epson, worth about $495.00, comes free with the QX-16. It includes a fast, easy-to-use word processing system. An excellent spreadsheet with integrated graphics. Complete electronic mail capability. A convenient calendar/scheduler. And more.

And it performs all this in plain English.

You may never need more than Valdocs 2 and its integrated capabilities, because you get so much power with so little effort.

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Because like the IBM® PC, the Epson QX-16 runs MS®-DOS programs.

But, unlike the IBM PC, the Epson QX-16 also runs CP/M®-based programs. All of which gives you real freedom of choice.

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- *Exclusive Valdocs 2 Software*
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- *IBM PC video emulation board*
- *RS 232-C and parallel ports*
- *3 expansion slots*
- *MS-DOS 2.11 plus CP/M-80 B2.26 operating systems*
- *GW-Basic*
- *1 year warranty*

Epson, QX-10, IBM, CP/M, Wordstar, Lotus and 1-2-3, SuperCalc 3 and Valdocs are registered trademarks of Epson Corporation, Epson America, Inc., IBM, Digital Research, Micropro, Lotus, Sorcim and Rising Star Industries respectively. QX-16 and MS are trademarks of Epson America, Inc., and Microsoft Corporation respectively.

SuperCalc 3.® And you can also run almost anything written for the IBM PC, along with the thousands of CP/M programs the PC can't touch.

You'll get 2 quad density 720K floppy disk drives. A high resolution 640 x 400 pixel monochrome monitor. 128K resident video memory. A CMOS Realtime clock/calendar. And option slots for some real options.

Speaking of which, the Epson QX-16 comes standard with many features IBM sells as options, such as the dual disk drives, 512K of RAM and a high resolution monitor.

(And by the way—should you already own the Epson QX-10,® you're in luck, too. Just drop by your Epson dealer and pick up your specially priced Valdocs 2 upgrade kit. You see, we really *do* believe in permanence.)

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EPSON

QX-16

MONEY MANAGEMENT MADE MAHVELOUS

Home Money Manager I ($59.95)
The Nickelodeon
20676 S.W. Elk Horn
Tualatin, OR 97062
(503) 692-3732

Accounting and managing household finances is a problem that plagues nearly every family. On the whole, this process is so frustrating that many people only bother to balance their checkbooks once a quarter, and typically only one in three regularly reconcile them with their bank statements, let alone manage their affairs through any kind of formal budgeting process.

Financial planners will be glad to explain the importance of carefully monitoring and controlling your personal finances. But of the several hundred accounting programs on the market, the majority are not suited for home financial management. Most are complicated and difficult to set up and use. Most are, in fact, intended for business management. So, what to do?

THE HOME MONEY MANAGER

The Home Money Manager (HMM) is a system dedicated to managing personal finances. It is an integrated program that relieves the burden of totaling check registers and reconciling them with bank statements. Extensive reporting facilities make it easy to see in a glance where your money is being spent, what your car cost over the last year, or when you last paid a particular bill.

The HMM is not an accounting system, although it superficially resembles one. It has been carefully designed from the top down to be used in typical households — not accounting offices — to manage every aspect of household finances easily.

HMM allows the use of up to 12 checkbooks or savings accounts, can handle 1,000 checks per year with ease (more with minimal additional effort), 12 credit accounts (Visa, MasterCard, etc.), two cash accounts, and automatically sets up dates for weekly, bi-weekly or monthly budgets. Other features are automatic entry of frequently-used check payee names, 65 user-defined budget categories, and a good assortment of automatically generated reports.

The program is entirely menu-driven. Instant on-line help is displayed on the screen whenever a question mark is entered at a prompt. Initial set-up and use is exceptionally easy. The unambiguous, easily-understood manual and unusually liberal customer support policy completes the package.

OPERATION

As delivered, the non-copy protected Home Money Manager disks must be configured. A step-by-step procedure is provided for copying CP/M and a few other files to a working copy of the master diskette. The procedures are flawlessly described and take only five or ten minutes.

Two disks are supplied with the HMM package. The HMM Master disk contains the HMM program itself; a data disk is supplied that has the support and (empty) data files arranged on it for maximum access speed. The data disk can be copied directly to provide a blank data disk for your files, or HMM can make another data disk for you, a process that takes five or six minutes.

The main menu is displayed on the screen a few seconds after the program is started. HMM menu items are clearly described and there is never any doubt as to what they say or mean. The on-line help function is available throughout HMM with explanations that are both lucid and unambiguous.

One of the major headaches in starting to use an accounting system is the initial set-up. HMM is remarkably easy to start up because it can be changed "on the fly." It is not necessary to initialize accounts before they can be used. This feature, uncommon in traditional accounting systems, allows you to add accounts as their need shows up, such as when entering checks, then go back and supply a name when it is convenient.

HMM set-up goes something like this: First, name your sources of income. HMM allows up to five sources of income to be used. Next, provide the names of accounts for which you frequently write checks. This might include a grocery store, public utilities, the telephone company and more. HMM allows you to pre-define up to eight such names; use of them lets you avoid typing them every time a check for them is written. The list of names can be changed any time you like; it's a convenience feature and needn't necessarily be used.

HMM provides 60 budget expense categories. The names for many of these can be assigned when you are first setting up HMM, but can also be changed or added as the need for additional accounts occur. The last 12 of these accounts are reserved for credit accounts such as Visa and MasterCard.

Twelve check and credit registers are provided for use. Although most people will not use the credit registers — they are used to track individual transactions made on credit cards — it shows the thoroughness with which HMM has been designed. The various check registers have restrictions on the number of checks that may be processed in a single time period, so some care is needed to ensure that your main accounts are using the larger account registers.

REPORT GENERATION

Once the accounts have been established, the program is ready to go. Simply enter checks as they are issued, record income and, using the review or print function, generate reports.

Reports are what make or break personal financial management systems. HMM provides reports of nearly every useful aspect of your

financial condition. Reports can be made of year to date and the budget periods of your choice, all entries in a particular register, or list entries by payee or account. It is easy to print out, for example, all the checks issued to the electric company or under a particular budget category.

Checkbook balance and reconciliation is nearly automatic. The balance is automatically maintained as each check or deposit is entered, and reconciliation consists of checking off each check returned by the bank. You can get a printout of all your outstanding checks any time you like.

HEADACHES AWAY

HMM takes the headache out of home budgeting and financial management because it is so easy to set up and use. It is exceptionally responsive and relatively fast. The longest delays are encountered when switching from one module to another from the main menu, but because of system organization, these delays rarely take place during data entry and are never an operational bother.

Errors are easily corrected either at the time the error is made or later when it has been discovered; such is never the case in a conventional accounting system. You can change the values, names and destination accounts of checks and deposits at any time.

Appropriate account titles, headings and prompts are automatically displayed on the screen as you need them, so you never have to hunt around to find an account number.

Unlike most formal accounting and database management systems, the sort routine used by HMM is unusually fast, and print time is largely determined by the speed of your printer.
printer.

HMM is one of the most responsive programs of its kind I've seen. It provides good "menu hopping," and allows easy backtracking to correct data entry errors. Errors can be corrected any time. You can go back and change any entry on a check, deposit or transaction. Corrections can be made by writing checks for negative amounts and balances can even be manipulated. (Prudent users probably don't do that very often.)

Perhaps one of the most outstanding features of the Home Money Manager is the support given by Nickelodeon. You can talk directly to HMM author Steve Hudgik any time you have a problem (you're not likely to have many), and software fixes are sent free to registered owners for a year after purchase with no charge for either the disk or postage. Finally, for an annual $20 upgrade fee, Nickelodeon will send a year's worth of upgrades to registered HMM owners.

Now for the bad news. HMM isn't perfect. As tested, there were a couple of petty annoyances, but these are being cleared up. I had only two "major" complaints and neither is fatal. The first was that sources of a deposit couldn't be named, and the other is that only one item (such as a check) could be deposited at a time, meaning that if you had five checks to deposit, you had to make five deposit entries. My petty complaints are: only one report could be printed from the print menu at a time (I'd like to give a list of all those to be printed, then let it fly), and the screen was refreshed too frequently during data entry. Happily, all these complaints are being rectified.

Is it worth it?

No doubt about it, keeping track of your home finances takes time and effort, even with HMM. But there are rewards for your effort in terms of financial control, goals finally reached, reduced strain around tax time and possibly even domestic tranquility.

The HMM will help considerably around tax time because accounts that receive tax deductable items can be automatically printed, removing all the drudgery of hours spent sorting through boxes of receipts at year's end.

HMM makes it easy to find things, possibly years from now. For example, it is virtually impossible to keep track of tax deductable "improvements" made over the lifetime of a residence with a pencil and paper method. With HMM you just set up an account called "house improvements." Thirty years from now you'll be able to compute the exact cost of your home (it will be considerably higher than you'd ever imagine) and will substantially reduce your capital gains tax liability after the sale.

Family budgeting can have an important impact on home life. Statistically, the major cause of divorce in America is related to money and the choices of what to do with it. Budgets tend to force cooperation and communication between working partners by establishing clearly defined goals. If nothing else, a carefully planned financial program will force discussion, and once problems are dragged into the light of day and put on the table, financial friction is often replaced with understanding and common goals.

The Home Money Manager is a very capable, versatile and useful home financial tool. You'll have no trouble following the well written manual, and after a couple hours' work, you'll probably understand everything that is going on. It is unusually complete, simple to use and the best I've seen to date.

Take a look at it; if you have need for such a program chances are you'll probably end up using it.

— Louis Lanzillotti

Lou Lanzillotti is a CPA and chairman of the Department of Accounting at New Hampshire College. He has been in private practice for over 10 years.

CP/M-to-MS/DOS and Back Made Easy

Uniform
Version 3.00,
MicroSolutions
DeKalb, IL 60015

Uniform is a slick utility program which allows the QX-10 to read and write 75 disk formats and converts CP/M files back and forth to MS-DOS file format. It is well-documented and menu-driven — you can master it in less than an hour and you'll still be able to boot it up and use it immediately months later. It's not an everyday utility, and for many users may be quite unnecessary, but there are situations in which Uniform can earn its keep at a single sitting. For instance:

- You want to buy a program but your dealer only has it in Kaypro format. With Uniform you can make your B: drive think it's a Kaypro, then pop in the Kaypro formatted disk and copy its files to A: with Pip or any other copy utility.
- The editor of your current novel is using a Wangwriter and you'd like to send him a Wordstar file right on disk. With Uniform you can initialize a blank disk to the proper format and copy your file to it or even write the piece right on that disk using your word processor.
- You bought a Titan QXPC board and now you want to be able to use some of your CP/M data files with your new 16-bit software. With Uniform, you can have a CP/M disk in A: and an MS-DOS disk in B:, read numbered directories off either disk and copy files

back and forth by the numbers.

Uniform will also initialize the various IBM-PC disk formats, which are the standards of the MS-DOS world. Hence, with this utility, you can exchange data disks with almost any CP/M or MS-DOS micro. Excepted of course are machines with eight-inch drives as well as those with 96 tracks per inch (aka quadruple density) drives, and other formats such as Apple II, thast require special hardware. The formats shipped by Uniform are all single or double sided 48 TPI ranging from the well-known (Osborne, Sanyo, Morrow) to the little known (Digital Super Six, Systel II).

A note of caution: the CP/M hardware world not only failed to standardize a disk format but also a terminal code format. Therefore, a CP/M program the runs on a Kaypro will not run on a QX-10 unless you have the proper installation program to tell it how to talk to your screen. MicroSolutions markets a 16-bit version and while it looks every bit as clean and functional as the eight bit version, it does not run on the QXPC II. Uniform also does not work when using TPM, and must be run under CP/M when used on the QX-l0.

Soup's On!

The Computer Chef
($29.95)
What's for Dinner?
($19.95)
The Best of Wok Talk
($29.95)
Chocolate Bytes
($29.95)

The Software Toolworks
15233 Ventura Blvd,
Suite 1118
Sherman Oaks, CA 91403
(818) 986-4885

The Computer Chef and associated programs make your computer into an electronic cookbook. I've found these programs both interesting and useful, and anyone else who eats food will, too.

The Computer Chef is the first in the continuing series of cookbook databases published by Software Toolworks. It is essentially a database manager for recipe files. More than just a "gee-whiz" demonstration of digital gimickry, this series of programs allows organization of most-used recipes along with an extensive collection of kitchen-tested surprises collected from who-knows-where.

The Computer Chef provides the database manager and 70 assorted recipes featuring soups, appetizers, various meat dishes and main course meals, and desserts. The Best of Wok Talk includes over 100 Chinese dishes and comes with a separate 22-page manual on how to cook with a Chinese wok. What's for Dinner (which requires The Computer Chef) lists 107 recipes for "eating in" and includes both main and side dishes, soups, salads and breads, then finishes off with an additional 108 dessert recipes.

But my favorite is Chocolate Bytes. These recipes drip with rich chocolate goodness. The program has over 100 recipes for desserts, beverages and main dishes. Caution should be used here: this disk is only for those past the brownie and fudge stage. Consider a few of the titles: "Desperation Cake," "Chocolate Zucchini Bread,"

Checks & Balances™ **Setting the standard in checkbook and financial management**

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Checks & Balances is compiled in assembler, not basic like the other older programs of the Home Accountant vintage.

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Checks & Balances keeps a full year at a time. Print, display or change anything for the year at any time!

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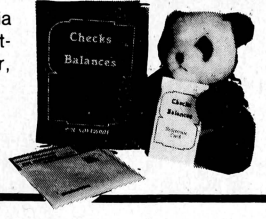
TIRED OF DIGGING THROUGH OLD STUBS TO REMEMBER WHY YOU WROTE THAT CHECK?
Checks & Balances gives you 45 characters of memo space for checks, deposits and cash transactions, and lets you disburse to five accounts. Dollars & Sense makes little sense with its lack of a memo!

WANT A PROGRAM THAT WILL RUN ON YOUR SYSTEM?
Other programs require Basic or a Pascal partition on your hard disk and only run on drives A: and B:. But Checks & Balances runs on any drive, on CP/M, PC-DOS and even the non-IBM MS-DOS machines and APPLE CP/M—Guaranteed! All it needs is 2 floppys or hard disc, 80X24 screen and 60K for CP/M, 192K for DOS.

BURNED BY OTHER SOFTWARE?
We have a 30-day money back guarantee and free telephone assistance. No additional warranty fee as with those other programs.

STILL ONLY $74.95—30-DAY MONEY BACK GUARANTEE—NOT COPY PROTECTED

Pick up CHECKS & BALANCES at your local dealer. If he is temporarily out, order directly from CDE. California residents add 6% tax. $3 shipping and handling per order. COD add $4. Visa and MasterCard accepted. Outside USA, $10 per order, no COD. Most orders shipped next day. Include street address for UPS 2nd day air, otherwise orders shipped by mail.



CDE SOFTWARE • (213) 661-2031
948 Tularosa Drive • Los Angeles, CA 90026

Circle 19 on Reader Service Card

"Oklahoma Crude," and "The Best Chocolate Cake in the World."

MASTERY IS EASY

The Computer Chef program itself is easily mastered, but even though it is menu-driven, you'll have to refer to the manual the first few times you add recipes to the database. Here are some of the things The Computer Chef can do:

- Display or Print all the recipe titles currently in your computer system by name, keyword or ingredients. For example, you can see the entire listing of "cookie" recipes by asking the Computer Chef to list the titles of everything containing the word "cookie".
- Scale recipes to fit ingredients on hand or change the recipe yield. You might like to change a dish that serves six into one that will do for eight. This takes but a second. A related feature lets you change the recipe so it fits what you have available. For example, if you only have two eggs, but the recipe calls for three, tell The Computer Chef and the entire recipe will be automatically scaled for two eggs.
- You can print a new cookbook page whenever you want it. Once you've written up your recipe (or changed one already on file) you can print a replacement page. This is especially convenient when someone asks you for a copy of it or you spill tomato sauce all over the card.

PERSONAL OBSERVATIONS

The Computer Chef is a useful tool. The only bad news is that you have a bunch of typing to do when you add your recipes to the database. You can use any ASCII word processor, such as PeachText or WordStar, to create recipe files for use with The Computer Chef, but typing recipes is not my idea of a fun job, and I like it a lot better when someone else does it.

Even so, I actually typed in about 20 percent of my favorites from bachelor days that were still penciled on backs of envelopes and other odd scraps of paper. They look a lot better when printed, and all are at least legible now. (They taste about the same, though.)

The Computer Chef excels at finding recipes. These can be referenced by words in the title, ingredients or keywords. For example, ever wonder what to do with the two egg yolks that are left over from something? The Computer Chef and What's for Dinner came up with nine suggestions ranging from (you guessed it) lemon meringue pie to chili rellenos and several types of cookies.

As far as the cookbook aspect of the Computer Chef series goes, you'll find good quality, tested recipes throughout. The selection is rich and varied, no mere collection of warmed-over hamburger recipes.

The QX-10, even with the Computer Chef, is never going to make it into the kitchen, and it will never replace the dozens of cookbooks most people have collected over the years. But it will prove to be a valuable adjunct to kitchen planning.

I've thoroughly enjoyed The Computer Chef series and anyone with a computer interest is likely do the same. The Computer Chef runs well on the Epson QX-10/16 computers, and versions of it are available for a wide variety of CP/M and MS-DOS computers. Try it, you'll like it! *J.H.*

Continued on page 22

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Circle 22 on Reader Service Card

A LOOK AT VALDRAW AND VALPAINT

By Melody Elwell and Jim Hansen

Valdraw and Valpaint are two of the latest product offerings from Rising Star Industries. This graphics combo is not only easy to use, but exceptionally powerful and capable of generating very high-quality images and drawings. The programs can be used for serious professional work, yet are simple enough for your children to enjoy as well.

The Valdraw and Valpaint package includes a small manual for each program and a Mouse Systems Field Mouse. The mouse plugs directly into the serial port on the back of an QX-10/16 computer and does not require an adapter cable. A Summagraphics MM1201 digitizer can also be used if desired, but is not available through RSI.

An additional program, PICU.SYS (Picture Utility), is supplied on the Valdraw/Valpaint distribution disk. This program is used to look through your picture collection. Pictures can be displayed for viewing or printed on a standard Epson printer or Diablo C-150 color ink jet printer. Several photographic display options have been included with PICU, including color separation, a focusing screen and a "flash" mode to eliminate the horizontal bar that frequently shows up on screen photos.

TECHNIQUE IS THE THING

Because Valdraw and Valpaint are so simple to use, the manuals are dedicated more to illustrating technique than instructing in program usage. They first describe how to get started, then suggest you learn by "playing." The various tools available in Valdraw and Valpaint are described in detail, but most people will probably skip the majority of the manual in favor of "learning by doing." Several color illustrations in the Valpaint manual show what an artist can do with these programs.

VALDRAW

Valdraw is an electronic drafting and design program. Sophisticated technical drawings for a wide variety of applications can be created. Valdraw is primarily a technical tool and can only make line drawings.

Applications, apart from technical drawing, abound. Educational and business users will find it useful for creating overhead transparencies, handouts and slides, along with specialized workbook illustrations. Students at all grade levels will enjoy the artmaking capabilities of the system.

Potential applications for Valdraw in the business environment include electrical circuit schematics for contractors and designers and overhead transparencies for the conference room.

For the architect, there are sections, floor plans and interior design. Drawings can be rendered in numerous shades, patterns and colors with Valpaint. You can also make your own image archives or "clip art". Such images can be recalled and then modified to suit any need.

Valdraw is compatible with a variety of graphics peripherals. The Mouse Systems PC mouse supplied with Valdraw and Valpaint and the Summagraphics MM 1200 are first choices, but other software compatible devices will work as well.

Valdraw images can be output to any Epson printer or plotted. Line drawings look much better when plotted, especially when displayed on overhead transparencies. Compatible plotters include the Sweet Pea 1, Hewlett-Packard's 7000 Series, the Comrex ComScriber and Houston Instruments' DMP-42 and 52P.

VALDRAW TOOLS

Valdraw provides all the standard drafting aids and tools such as a drawing grid for organizing your drawing layout, a ruler (decimal or English) and a T-square for squaring vertical and horizontal lines. The shape menu provides circles, rectangles, arcs and French curves.

A "gravity" function allows you to instantly and precisely locate the cursor at a line end point, the center of a circle, or drawing grid intersection. This convenience feature increases the accuracy and appearance of the drawing.

The block functions provide some of the more powerful features of Valdraw. These allow the creation of templates, which might include furniture and appliances for use in floor plan layouts or electrical or electronic symbols such as circuit breakers, transistors, and gates. Blocks can be erased or rotated, moved, stored in files and copied to different screen locations.

Once a Valdraw drawing has been made, it can be "dressed up" with Valpaint. Valpaint allows shading and free-hand textures to be added using the tools of an artist.

VALPAINT

Valpaint is an artist's tool. Unlike Valdraw, which specializes in line drawings, Valpaint provides a variety of tools, shades and patterns that make it exceptionally powerful in the hands of a skilled artist. Simple to use, it requires little or no training.

Possible applications for Valpaint range from graphic design and illustration to graphic storytelling (comic strips) and plain, unadulterated art.

Valpaint uses the full high-resolution (650 X 400 pixel) screen of QX-10/16 computers. The various tools, palettes, shades and fill patterns currently in use are displayed around the edges of the "canvas".

Valpaint utility features and additional tools, paints and patterns are accessible through pop-up menus. Monochrome computers offer five

Continued on page 19

GET THE GOOD WORD OUT

Dear Epson World,

Magnificent, fantastic, great. Epson World is just what the doctor ordered. Being a total neophyte in the computer world often makes one nervous. This is true especially when the computer one buys looks nice, is simple to use, and does everything that you thought it would and much more. My QX-10 has performed flawlessly for months on end, but after reading many of the popular computer publications I begin to wonder. Did I do the right thing? Surveys always seem to avoid mentioning Epson. Could my judgment have been wrong?

I never seem to be able to find "Epson-compatible" software or read an article about it in the popular computer magazines. Surely there must be others who are as happy with their Epson computers as I.

In Epson World, I find that real people are writing about *my* computer, and judging from the letters from your readers, it appears many suffer my fate as well.

Epson World has provided us with a forum. It's up to us to spread good words about the superb equipment of which we are so proud. Let's hope that as others read about the virtues of Epson equipment, they will give Epson an honest try.

P.J. Rader
Greenwood Lake, NY

No Planned Obsolescence

Dear Epson World:

I've had my QX-10 for more than two years, and during that time Epson has not once made my computer obsolete by introducing new upgraded models. Even the QX-16 doesn't disturb me, because I know that I can add a Titan board and use the MS-DOS software if I really need to do so.

Apple and other manufacturers make their enhancements by introducing new and improved computers about once or twice a year. If I count right, Apple has introduced six computer models from the II+ through Macintosh in about two years. Epson, on the other hand, has placed emphasis on enhancing software, and thus has not suffered the degrees of obsolescence experienced by other computer makes.

William A. Cooney
Santa Rosa, CA

It is interesting to note the difficulty in developing a second truly successful computer. Without the Apple II and its continuing popularity that company would be out of business. The Apple III and Lisa have faded into oblivion. The Macintosh has had its ups and downs, but is emerging as a true success.

IBM has experienced similar difficulty with its microcomputers. Big Blue finally stopped manufacturing the PC Jr., the Portable PC has really gone nowhere, and the AT, regardless of its ultimate destiny, has had well-documented hardware and software problems.

It remains to be seen whether Epson's second desktop system, the QX-16, will be successful.

On the issue of obsolescence, it's instructive to note that until you demand something your computer cannot satisfactorily perform today, it will never become obsolete. No matter how long you own your computer, it will run the same program at the same speed it does today. The keyboard and screen will look just the same, if a little worn, but the performance of the system will not change. Furthermore, your software won't "wear out" either. Until you're no longer satisfied with the software you are using, it will be as good as the day you bought it. Until you change the rules, a computer system does not become obsolete.

Anger and Propaganda

Dear Epson World:

Your editorial in the Spring issue of Epson World prompts me to just this side of anger, and I'm not easily upset. When the QX-10 and Valdocs came along, I gleefully jumped on. I've owned my QX-10 since November 1983 and have been waiting for Valdocs 2.0 ever since.

I've been patient. I even bought an LQ-1500 in May 1984, not knowing it needed Valdocs 2 to print graphics. When I found out, no problem; Valdocs 2 would be along any day.

I've been loyal, as if supporting some kind of a movement. I, too, was incensed at the popular computer press. Why didn't they see the merits of the system and believe in what was to come? Any day now, Epson will come to the fore and defend its dream, I believed, and support us dedicated users by investing a few bucks in advertising, responding to letters from users, honoring their warranties, and in general, making QX-10 users feel that the company was behind the product and its customers.

Well, they haven't done that yet! The resale value of the QX-10 is in the bottom 5 percent, lower than many systems no longer in business. There is more support for the Osborne than the QX-10. Can you explain how an Apple Macintosh sold with no more software than a notepad? It take more than a "damned good product" these days — the public has to know it is a damned good product.

The Epson computer is great, Valdocs is almost great, but Epson won't spend the bucks to back it up with advertising and support. I have to spend money on a quarterly publication to get propaganda such as your editorial.

Lars E. Remar
Universal City, TX

Continued on page 18

Continued from page 17

We have no apologies to make for our editorial, in which we questioned why Epson receives such bad press. We, too, would like to see Epson stand up and assert itself, through a long-term aggressive marketing campaign.

We will take issue with you on user support, however. To our knowledge, Epson, through Chuck Champlin, has one of the finest user-support programs in the industry. Any group of ten or more users can become an "official" user group and receive regular mailings of news and notes.

Epson also supports Epsonline, a forum on CompuServe. It is a lively, nationally-accessible "party line." Anyone can call in, leave messages, ask questions, and debate with others coast to coast. Epson officials regularly hold electronic conferences in which users talk directly to them, asking whatever pointed questions they like. To access Epsonline, all you need is a modem, Valdocs MAIL (or another telecommunications package), and a CompuServe access code, which you can buy in a kit from Radio Shack. Once on CompuServe, type GO PCS-19.

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Circle 7 on Reader Service Card

SDRAW Update

Dear Epson World:

Being an avid novice, I must comment on the format used for the program listings of SDRAW in the Spring Issue of Epson World. I consider it very inconvenient to have to go flipping through two continuations for the entire article and program. Also, being myopic, I would like to see the program listing at least as large and distinct as the article. Reading 510 lines of print gave me a headache.

Dennis C. Davis
Gray, TN

We received several letters about SDRAW. Program listings are a problem for publishers and readers alike. If you aren't interested in the program, then it is a waste of space; if you are interested, then of course you want it to be legible. Our approach is to print listings as small as legibly possible, trying to please everybody, perhaps satisfying none. But we also encourage our authors to supply their programs on disk for those interested. For example, Scott Cardoza has supplied a working copy of SDRAW, along with some pictures on his disk for only $15.

Spell Check Check

Dear Epson World:

I read your article in Tips 'n' Tricks on adding PeachTree's Spelling Proofreader to the Valdocs system. I have found an easier way ...

We received quite a lot of mail about this subject, and thank everyone who took the time to write.

Probably the best alternative approach was simply to copy the standard Valdocs file to another disk, then add the proofreader. A lot of people had trouble erasing the files; they protected and we failed to catch it and mention that you need to type "PROT filename.ext <0> before attempting to erase it.

It is unfortunate that there is no commercially available spelling checker for Valdocs 2. We understand that Rising Star is working on that now. Thus, the usefulness of the PeachText spelling checker is limited to Valdocs 1.18 and 1.19. ●

Continued from page 16

shades (four shades of green, plus black) and sixty different patterns.

The painting tools include a pencil, brush, airbrush, eraser, text labels, geometric shapes, a path recorder and boundary fill. The path recorder records screen activity as an image is drawn; later, it can be used in playback mode to replicate the original image in a different screen area.

Four different paint effects are available: opaque, transparent, erase a chosen color, and "dithering." Dithering creates a surprising pattern that has no equivalent in conventional art media. Most effective with a color system, it examines the area under the cursor. If a chosen color or shade is not there, it is toggled on; if the color is already there, it is turned off. There are no restrictions; dithering can be used with patterns or full paintings.

Portions of paintings can be copied, erased, stored, moved and merged with other paintings. Valpaint also has a limited collection of line drawing tools, similar to those found in Valdraw. A magnifier ("zoom") feature allows individual pixels to be modified. You'll find very few artistic restraints in Valpaint.

Pictures created or modified by Valpaint can only be printed with Epson printers or the Diablo C-150 color ink jet printer. If color is in your future, your choice of color printers is currently restricted to the Epson JX-80 color dot matrix printer and the Diablo C-150. Of these two printers, the Diablo provides brilliant, vibrant color rendition, comparing well to the Epson color monitor.

IS COLOR AN AFFORDABLE LUXURY?

The images possible with a standard monochrome QX-10/16 are impressive, but pale when compared to those done on a color system.

Color for the QX-10 and QX-16 is being introduced in the U.S. later this year (see the Exim Systems product announcement elsewhere), and with it Valpaint has 125 dazzling colors. (Valdraw provides only seven.) The only word to describe the screen display is "fantastic." Hues are vibrant and saturated. Lines are crisp and clean. It has to be seen to be appreciated.

Slides made from a color screen, with proper exposure and sharp focus, are dazzling, and display all the color and brilliance of the screen. Printed color can be a little disappointing, especially on the JX-80, but the Diablo ink jet does fairly well.

ART PROCESSING FOR THE MASSES

Valdraw and Valpaint are two quality programs that you'll enjoy and never outgrow. As a business tool, there is nothing on the market offering even a close price/performance ratio. And no similar packages are as easy to use; you'll be producing useful work in less than an hour. Artistic aptitude can't hurt when using Valpaint, but you don't have to be a maestro of the visual arts to create eye catching graphics.

Because the gratification is immediate, and there's no messy paint or ink, art becomes fun and easy. Kids and more than one adult will enjoy Valpaint, even if it is only for the fun of it. Visit your dealer for a demonstration ... you'll find the mouse almost irresistible. ●

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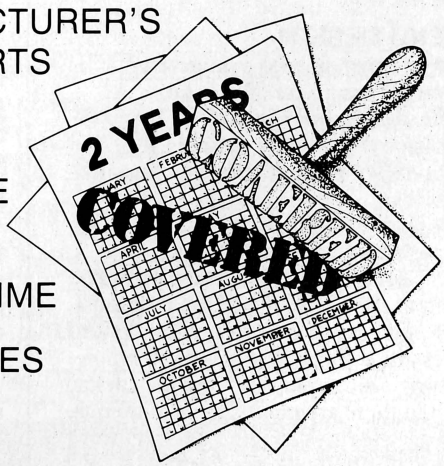

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EASD-120-785-1

Circle 8 on Reader Service Card

Make Your Software Helpful and Friendly

By Alan L. Zeichick

User-friendly is a catch-phrase in the computer industry, and with good reason. Execution speed, memory efficiency and comprehensive output options are plusses — but the acid test comes at the computer keyboard.

If a program's not intuitively easy to run, then it will only be used under protest, or — worse yet — not at all.

How can you write user-friendly software? Well, start by *using* commercial software. Note what features you find helpful and informative — or annoying and distracting.

One popular word processor provides easy pointers to its owner's manual by displaying the appropriate page number at the top of the screen — at all times. A public- domain package allows the use of either function keys, number keys or mnemonics at all menus.

Below are a few tips that we think enhance program friendliness. You may have other suggestions — if so, write and tell us.

MENU DESIGN

- Are menus used extensively? Remembering a lengthy list of command options is hard for the occasional user — so simplify the process with a short menu of essential choices.
- Do the menus have shortcuts? Can experienced users issue direct commands or specify a complete menu path at the beginning of the program?
- Is it easy to choose a menu option? Pressing a single key is faster than hitting Return after moving the cursor. When there are many layers of menus, try to keep the typing to a minimum.
- Are intuitively obvious keys used for selections? Alphabetic keys are best when the choices begin with various letters: A for Add, D for Delete, P for Print. Numbering these options requires a mental table-lookup process, and is inconvenient for touch-typists.
- Are the menus consistent throughout the program and other software? Many programmers develop an individual style of menu design — and users appreciate the consistency. If Q always means, *escape to previous menu*, each package will be easier to learn.

KEEP IT MOVING

- Are long pauses kept interesting? Studies have shown that pauses of more than a few seconds appear interminable. That's why telephone hold devices play music.
- Does the user know the pause isn't an error? Warn the user: Display the message *Working...* for pauses longer than ten seconds.
- Is the user involved? It's not much work to inform the audience that the current operation is reading... sorting... writing... verifying... ready. If appropriate, give progress reports: Read 100 records, 200 records, 300 records.
- Does the user know how long the wait will be? If an operation's real time is constant, why not say, *Be back in three minutes*. If the time involved in the computer's work can be calculated, tell the user, *Reading and processing 103 records, estimated time 4.2 minutes*.

BE CONSIDERATE

- Don't use many audible tones. Computers are used in all physical environments, from labs to offices to courtrooms. Beeps in a busy office are embarrassing. If you prefer sounds, offer a chance to disable ***all*** tones.
- Be kind when using a color monitor. Not all users will enjoy red letters on a blue background, with emphasized text in pale green. Offer a selection of colors — some sparkling, some businesslike.
- Before opening work files for output, test to see if a file with that name actually exists. If it does, pick another name from an internal temporary-file list or ask the user: *May I erase TEMPFILE.123? <Y>es, <N>o and return to the menu.*
- When asking for the name of a data file, display the disk directory. It's not easy to remember all those names!
- Test for the data file's presence before asking for program options. It's annoying to type lines and lines of application specifications, only to see *File Not Found* and the operating-system prompt. Offer the user a chance to correct the name: *No file found, please re-enter name. Press Return to quit.*

DOCUMENTATION

- Don't make the printed manual cute — the program's users might not be amused. Humorous figures and examples are fine — as long as they're not overdone.
- Include a quick up-and-running section at the start of the manual. Most owners can't wait to use their new program, so give them a hand. List any hazards at the beginning as well — don't bury important warnings in the body of the manual.
- If the documentation is more than a few pages, make a comprehensive index. Don't assume that a table of contents or quick-reference guide can replace the index.
- Basic machine information can be placed into an appendix. Advanced users won't need a guide to making back-up copies of a disk, so guide novices to the back of the manual.
- Number parts of a difficult procedure, such as installing the program or producing a complex report. Use statements like: *If you're using a dot-matrix printer, go to step 15*.
- Interesting but irrelevant technical information doesn't belong in a set of directions. Refer inquisitive users to a technical appendix or a later chapter.
- Finally: Provide a complete list of error messages — and detail steps to take for each message. ●

IF YOU OWN A QX-10, YOU OWE IT TO YOURSELF TO GET QXDRAW!

WHAT IS QXDRAW?

QXDRAW is a powerful graphics design tool that exploits the excellent graphics capabilities of the Epson QX-10. It allows someone unfamiliar with computers to design and draw figures, charts, schematics, or blueprints in no time. QXDRAW has the capability to store, retrieve, and print figures drawn on the screen. In addition, it can fully manipulate figures and text by changing size, angles, and dimensions.

QXDRAW —

* Provides an easy-to-use cursor that can be moved about the screen.
* Draws straight lines between points on the screen.
* Draws curves between points on the screen.
* Draws circles and ovals easily.
* Allows solid, dotted or dashed lines to be used.
* Allows lines of varying thickness to be used.
* Includes "area fill" capability.
* Features the Epson function keys: HELP, UNDO, STORE, RETRIEVE, PRINT, INDEX, and STOP.
* Allows text to be displayed at any location, size, or angle.
* Stores and retrieves the screen display on disk.
* Prints the screen display on Epson printers.
* Allows figures and symbols to be created, stored, and retrieved at any location, size, or angle.
* Allows text and figures to be slanted in any direction, giving modern or three-dimensional effect.
* Provides for user-created files to be input and displayed on the screen. This allows data from other programs to be used.

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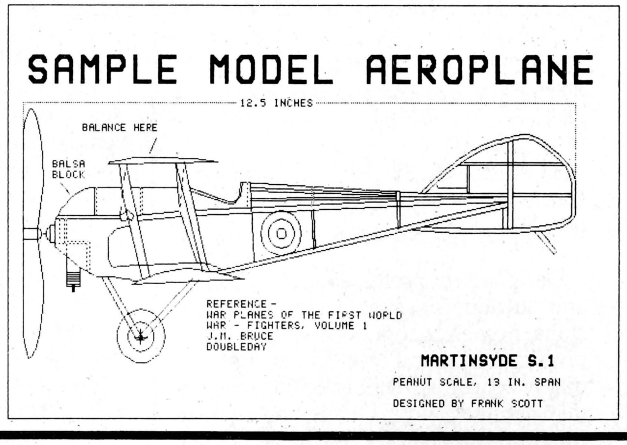

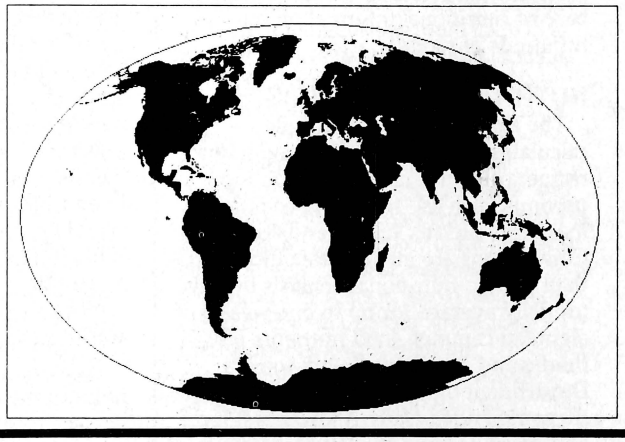

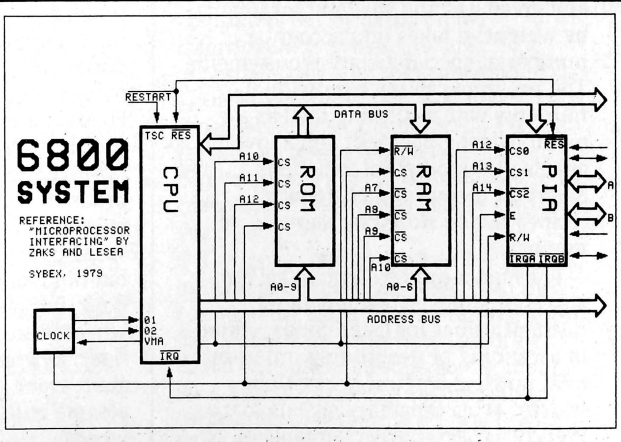

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Circle 2 on Reader Service Card

Continued from page 15

Professional Nutritional Analysis

Nutri-Calc DNAS ($129.95)
(Dietary Nutritional Analysis System)
Oakwood Publishing
P.O. Box 3934
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(800) 634-5545

Designed for professional dietitians and nutritionists, spas, weight-control clubs, home economics classes, physicians, clinical researchers, and others concerned with scientific diet management, Nutri-Calc is actually two programs on one disk, plus a large data base of nutritional information on hundreds of foods.

NUTRITIONAL ANALYSIS

The first program, Nutri-Calc, calculates dietary intake by food name, recipe, or menu, using common food portions such as "slices," or common measures such as "cups" and "ounces." Conversions are made automatically. It then gives a nutritional analysis by day (or daily average for up to one week,) of eighteen common food nutrients plus fluids, and compares it with the US Department of Agriculture's RDAs (Recommended Daily Allowances) for any given age and sex, and for infants, by weight. It takes into account a number of special dietary requirements. The program can track individual nutrients with a running total as a menu is being planned, and show the effects of hypothetical variations. Standard menus and customized recipes can be stored by name or number.

Through a printer, Nutri-Calc can also comparatively list any or all nutrient values for listed foods, sorted in ascending or descending order, by total nutrient amount or per unit weight. (This capability reveals that a Wendy's cheeseburger contains considerably more sodium than one from Burger King or McDonald's, information relevant to many people these days.)

WEIGHT CONTROL

The second half of Nutri-Calc is called Calorie-Magic. It computes an individual's caloric utilization based on sex, age, height, frame, weight, and activity levels from a database of 35 common activities. It takes the desired weight goal and provides a computerized weight-loss or weight-gain schedule, with weekly target values and appropriate caloric intakes.

THE DATABASE

The usefulness of the entire program depends upon the accuracy and the completeness of the database. Nutri-Calc's memory includes the nutrient compositions of 730 common generic foods, and 164 brand names, including 50 fast foods and 53 special formulas. Updated data and over 125 additional foods may be added to the list, assuming the nutrient values are available. A printout of the list of food items alone, without nutrient analysis, is 19 pages long.

Concerning completeness, at first glance this program seems to go to great lengths to provide an exhaustive listing of possible foods: There are 13 kinds of white bread alone, 23 kinds of milk listed, 49 meats, 39 varieties of cakes and cookies, and the entire menus from Burger King, Kentucky Fried Chicken, McDonald's, Pizza Hut, Wendy's, and Taco Bell. (What, no White Castle? No Bob's Big Boy? — *ed.)* Nutri-Calc even lists "imitation" foods such as sweeteners and cream substitutes.

However, there are several noticable holes in the database. The authors neglected to take into account the food preferences of a minority, but rapidly-growing segment of the eating population, namely those interested in natural, organic, and vegetarian diet. Foods not listed include chick peas (garbonzo beans), millet, alfalfa sprouts, carob, granola, and soy beans and soy products such as Tofu, lecithin, and miso. The database includes sugar-based imitation pancake syrup, but not real maple syrup; buckwheat flour, but not buckwheat groats; whole wheat bread, but not whole wheat flour; long grain whole rice, but not short grain. Also missing: parsley, sesame butter ("tahini"), and sea weeds.

THE TECHNICAL ASPECTS

Nutri-Calc will auto-boot from the left drive of the QX-10 and is not copy protected. It configures to all Epson printers. A printer is not required to use the program, but some of the search and sort capabilities are unavailable without one. The program will not perform screen dumps. Although configured for the QX-10 (running on TP/M-II), Nutri-Calc does not support any of the System Control keys on the HASCI keyboard: no UNDO, no HELP, no STOP. Even the ESCAPE key (on new keyboards) is impotent. In fact, the unforgiving irreversibility of the program is quite noticeable, especially after using Valdocs and Peachware. For example, you can visually search down a listing of foods, but not back up to the previous screen. If you enter an incorrect variable, you have to walk forward, through the entire prompt sequence and begin again, to change it.

Documentation, in the form of a 50-page paperback manual, is adequate. There is no index. Not indicated in the manual is the fact that Oakwood offers a toll-free 800 number. However, for technical questions of a bio-chemical nature, we are referred to the program's developers, PCD Systems, 163 Main St., Penn Yan, NY 14527.

One reason why Nutri-Calc may not be useful for the non-professional is that it will not compensate for ignorance of the more complex implications of nutrient complementarity. The program deals only with intake, not biological availability or assimilation. It also does not take into account the anti-nutrient actions of junk food and non-food additives, and substances such as refined white sugar, caffeine, alcohol, and nicotine. (Coffee, for example, greatly depletes vitamin C in the system.)

Nutri-Calc is a simple and powerful program for use by professionals for at least partial dietary analysis and weight control for the average American consumer. It's database lacks some items found in natural, vegetarian and macrobiotic diets, and it does not analyze for several important nutrients. We would like to see an updated and more complete version.

Given these limitations, Nutri-Calc can certainly still earn its keep taking the time and tedium out of most standard nutritional analysis. It compares well with other similar programs, and it is certainly far superior to manual methods!

— *Lonny J. Brown.*

Lonny Brown is a holistic health counselor in private practice in Greenfield, New Hampshire. He holds a Ph.D. in Holistic Health Sciences/Education from Columbia Pacific University, and is the author of "Self-Actuated Healing".

Continued from page 64

LOTSA LISTINGS

Here is a partial listing of the categories of software described: Games (16 favorites including Adventure, Chess, Golf, Startrek and Wumpus), Directory and File aids (twelve including File Sweep, Squeeze and Unsqueeze, file Un-eraser and Sorted Directory), Miscellaneous Utilities (16 including Super Submit, Bad Sector Finder, File Comparer and Banner Printer), Applications (13 here, featuring a Calendar Generator, Label Printer, Sort Utility, Spelling Checker and Computer Typewriter), five File Library Programs, Telecommunications (SMODEM53.COM) and the Hacker's Toolbox for those who do heavy-duty trucking.

Having the documentation for a collection of public domain software without verifiable copies of that software is about as bad as having the software but no documentation. PeopleTalk solves this problem by placing all the programs described in the Free Software Handbook on a set of disks which is sold at cost. These disks are available in many CP/M computer formats (including the QX-10) and are priced at $49.95 for a set of however many disks it takes for the format chosen. The QX-10 version includes seven disks. These disks can be copied or given away without recrimination; the only restriction is that the software itself may not be sold.

There are those who feel uneasy about commercial distribution of public domain software, but in this case the public is clearly the winner. The book is first rate, needed and moderately priced. It would cost a fortune just to locate each of the programs described if you did it yourself, let alone test, verify and document each one as the authors did. The Free Software Handbook and public domain disk set is clearly a best buy and is highly recommended.

The Truth of Z80 is Told

Power Projects With Your Timex/Sinclair, by Jim Stephens
Scott-Foresman and Company
228 pages, softbound, $12.95

This book never mentions an Epson computer. All it talks about is the Timex/Sinclair computers, for whatever good they are. But there is a common thread between your QX-10 and the little Timex computer: both use a Z-80 central processing unit and share a similar input-output structure.

Very few books about computer hardware projects have been published lately, and even computer magazines specializing in hardware of one form or another are becoming scarce. This book is a happy exception to the trend.

Stephens begins with a brief discussion about the Timex computer, then goes on to describe the Z-80 address and data buses, control signals and machine language instruction set. A good simplified microprocessor background is presented in chapter one.

Chapter two describes the fundamentals of interfacing a computer to the "real world." All the various standard logic, transistors, optical couplers and more are described. This chapter also covers wire-wrapping, prototyping and general construction practices and provides an excellent survey of hardware components and how they can be connected to each other.

Chapter three describes how your project can be interfaced to the computer. Power supply design is discussed, followed by several parallel interfaces with BASIC software drivers.

IT'S WORTH IT

This reviewer enjoyed the book for its content and style. The projects are all easily put together with parts that can be obtained, for the most part, from Radio Shack. Simple as some of them are, they are all terrific from the educational point of view, and none belong in the "trivial" category. Once a particular project is studied and explored, you'll be able to continue on your own to develop it further.

This is an excellent book for anyone who has an interest in building computer hardware projects; the style and grammar of this book make it readable by young and old alike.

Art or Science?

Art and the Computer, by Melvin L. Prueitt
McGraw-Hill, 1984
246 pages, softbound.

This is a book loaded with nearly 300 full-color pictures of the latest in computer art. Computer art now consists of more than just a collection of seemingly random lines and patterns. Although this type of "mathematical" art is also represented, this book shows the possibilities of pictorial and abstract art as generated on high-performance graphics computers by real artists.

The book, introduced by Carl Sagan, is printed on heavy slick paper. The photographs are rich and vivid. A "must see" for those interested in computer art.

Generation Gap

The Fifth Generation, by Edward Feigenbaum and Pamela McCorduck
Addison-Wesley
275 pages, hardcover, $15.55

This book highlights what the authors view as Japan's computer challenge to the world. The "Fifth Generation" refers to the next generation of large mainframe computers, those which, using advanced artificial intelligence techniques, will provide the computational capability to "think like humans", and so solve human problems.

In 1982 Japan initiated a 10-year program intended to leapfrog the American lead in computer science and technology. With a government grant of $450 million, matched by eight Japanese corporations, the best and brightest computer scientists in Japan have been assembled with one goal: produce the first "knowledge information processors," computers which will reason, not simply compute.

The reasoning powers of these computers will be based on the information provided to them: essentially, the sum total of mankind's knowledge, continually updated by those working on the program. The target date set for completion of the project: 1990. (Typical of the Japanese to complete a 10-year plan in only eight years -*ed.*)

This book, written by two artificial intelligence experts from Stanford, first sounded the alarm that we can not afford to stand idly by while Japan whittles down our supposed "10-year" software lead. Our government and private corporations, including especially IBM, DEC, CDC, Cray, and Univac, have been unable to meet this challenge with a cohesive program.

Exactly what are the Japanese up to? Can they actually pull it off? Will we become a "second rate" computer power during the information age? Read all about it in this book and decide for yourself. ●

IDEA PROCESSING

Using the Valdocs Cardfile program won't make you a great writer. But it can't hurt your chances.

By Melody Elwell

It seems like it's impossible anymore to pick up a computer magazine, browse through it, and not come across the words "idea processing" somewhere. It's one of the latest catch phrases. But actually, if you have Valdocs 2 with CARDFILE.SYS, a mini-database program module, you also have an outline and idea processor. Now, you're probably wondering how a program like CARDFILE, normally used primarily for applications like customer and catalogue lists, could be used to process ideas. But if you can look at this mini-database program as an organizational tool for ideas and details, you'll see how easy it is to use CARDFILE.SYS for applications like constructing preliminary outlines, keeping track of report and paper bibliographies.

Even if you have no experience with electronic index card files, the Valdocs Cardfile program shows itself to be easy to use and versatile. However, if you've had experience with more sophisticated relational database systems, CARDFILE.SYS may at first appear rather limited. In fact, if you require the power and flexibility necessary for your data management application (such as vast customer lists and complicated sort routines), Cardfile is not for you.

But for many people, Cardfile is more than adequate.

EVERYBODY WANTS TO GET INTO THE ACT

As word processors — and the tremendous advantages they offer over typewriters — become more firmly embedded in society, those who can touch type may think that they, with this great writing tool at their disposal, can write anything. The Pulitzer Prize-winning Great American Novel, or the Nobel Prize-winning essay on the Nature of Reality are just a few bytes away. Well, that's ridiculous, of course. The blank screen is just as intimidating as the blank piece of paper used to be. The only difference is that now we can delete whole passages (either accidently or with purpose) and change it all around before having to commit it to print and face the hard evidence.

When duty or opportunity calls for writing an article, paper, report or book, rather than sitting down cold to the word processor, I've reverted to an old ritual, that of taking some time beforehand and warming up to my topic with a plan. Although some brilliant and gifted individuals can do all the logical progression for a paper in their heads and free associate from there, most of us would rather work from an outline.

Some say this process leaves no room for spontaneous thoughts and good rhythm. Writing becomes stilted. But I disagree. It only seems like the word processor is insidiously subverting creativity, perhaps because now we can patch together flaccid prose with ease, process can after can of alphabet soup without taking the time to taste it. But I suspect the real culprit is the lack of a solid foundation — the bone structure of a cohesive piece of writing.

From this point on, I'm going to assume you either have a copy of Valdocs 2 with the CARDFILE.SYS program, and have at least peeked and poked around in it, or that you can follow along with the ideas behind the following information. I don't intend to guide you through Cardfile — the program is so easy to operate, a guide is not really necessary. Also, the data organization concepts I'm going to cover could be applied to other databases and automated index card programs as well.

Like most electronic index card programs, once you define the card's information structure and input the data, the program will help you sort, store, retrieve and manipulate the cards (or records) in a file.

A Valdocs Cardfile card has three levels of sorting (filing) order. A card's design will be determined by how you want to group the information in the whole file, so you can manipulate the cards the way you want later. With the Valdocs cardfile program, you can only have one file open at a time.

Figure one. Screen dump of a plain card

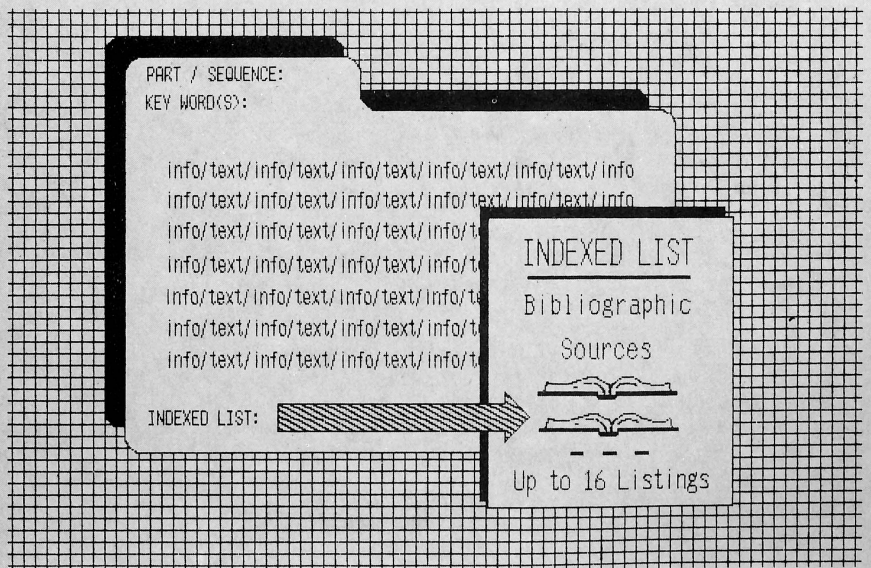
```
Primary title  . . :  _____________
Secondary title  . :  _____________
Title 1  . . . . . :  ____________________________________________
Title 2  . . . . . :  ____________________________________________
Title 3  . . . . . :  ____________________________________________
Title 4  . . . . . :  ____________________________________________
Title 5  . . . . . :  ____________________________________________
Title 6  . . . . . :  ____________________________________________
Title 7  . . . . . :  ____________________________________________
Title 8  . . . . . :  ____________________________________________
Title 9  . . . . . :  ____________________________________________
Title 10 . . . . . :  ____________________________________________
Title 11 . . . . . :  ____________________________________________
Title 12 . . . . . :  ____________________________________________
Indexed list . . . :  _____________ (A-P)

 Please select a Card File option and then press RETURN.

     <U>se a card file                  <M>iscellaneous support
     <C>reate a new card file           <R>ename or delete a card file

                    < UNDO for prior menu >-------------< 4:48 P >-M
```

Figure two



The first sorting level of a card is called the "Primary Title." (See Figure 1.) Within a file, the individual cards will be ordered according to the alphabetical or numerical value entered into this category. These categories are known as fields. This field can contain information up to thirteen charaters long.

The second sorting level is the called the "Secondary Title." After the first field has been sorted, the secondary title field will be sorted by the alphanumeric values of the data entered here. This field is twelve characters long.

The third (and most complex) level of organization is called the "Indexed List." This feature allows for further grouping by first assigning definitions for the letters A-P, then, assigning those representative (or symbolic) letters to your individual cards, according to your indexing needs. A single card can be involved in up to sixteen of these different sub-groups. More about the uses for Indexed Lists later.

OUTLINING WITH CARDFILE

You can organize your prospective text a few different ways. The most common is the structured paper outline form. Yes, that's the same, rigid outline structure your English teachers had you prepare for those dreaded expository papers. If that's *too* rigid a structure, another and more flexible way to organize your paper is to break the topics and ideas down into isolated parts, sticking details under different topic headings and letting the paper take form as it evolves. Your choice will depend on how detailed your paper is expected to be, and how organized you need to be before actually getting down to writing the paper.

Regardless of which outline form suits your style, Figure 2 shows a generic card design you might want to use for outlining small papers and articles. The design is flexible, and you can more or less tailor the details to suit your needs.

For an example, let's look at one of the cards from the outline I used to prepare this article. In this case, my indexed list was a list of all the illustrations for the article. (See Figure 3.)

You could use the letters A-Z or numbers for your first field values. It all depends on your outline type, as the Roman numerals aren't good for much in this kind of sorting system. Even so, it's very easy to shuffle and add

cards as your outline grows, and you get a clearer picture of how you want the paper to develop. When you want a hard copy of your outline, use the Cardfile print design option, and print all the cards in sequence.

If your paper or report is going to be a large one, you'll need more sorting levels. This is possible, but you will have to step back a bit and look at the Cardfile program in context with the Valdocs Indexer program.

Because Cardfile makes use of the Valdocs Indexer, an additional level of outline organization is suddenly available. By using a whole disk for your outline, you can manipulate the individual card files (deleting, renaming, cross-referencing, etc.) through the Valdocs Indexer, as if they were subject headings in a major treatise. Figures 4, 5, and 6 illustrate flowcharts and designs for large papers.

Let's say your paper is about the history of lettering and type fonts. One cardfile might be entitled, "Part 1: From Pre-historic Times up to the Greeks." Cards in that file might cover topics such as "Egyptian, demotic script," "Chinese, word pictures," or "Phoenician, alphabet." Another cardfile on that disk could be "Part 3: Runes and the National Hands."

Within each part (or file), you can have up to 99 different topics (or cards), and have the ability to arrange and sort these topics through the individual files's indexer (using the "SEQUENCE:" field to sort the cards). Each file could have an indexed list of sources for the subject heading, and at the bottom of each card, you would be able to make up to 16 references to books and other sources used for the topic's information.

When you want a hard copy of your outline, you'll want to make a screen dump (with your printer on and connected, press [CTRL-P], and the information on the screen will be recorded by the printer) at the different index levels. In other words, you'll want a screen dump of the index of card files on the disk, and a screen dump of the Indexed List for each file. You might even want to do a screen dump of the indexes within the file.

This is especially helpful if you want to do heavy rearrangement within a major topic category.

Then, print out the contents of the cards with the print design option and print the cards in sequence within each file. Now you have a road map for where the subject is going: A really handy tool for putting together a tight, well-planned manuscript.

Figure three. Screen dump of a filled out card

```
SEQUENCE:              4_____
TOPIC/KEYWORDS:        Short_Papers
INTRO SENTENCE:        To_setup_a_cardfile_outline_for_a_relatively_small_____
X                      document,_such_as_a_magazine_article:_____
X                      _____
X                      _____
OTHER PARAGRAPHS:      Primary_title_=_Sequence_in_the_document_____
X                      Secondary_title_=_Topic_or_key_words_____
X                      Indexed_list_=_Bibliographic_sources_____
X                      _____
X                      A_-_Z_vs._Numbers_____
X                      _____
X                      _____
X                      _____
Indexed list . . . :   B_____  (A-P)

[Card file activated]
  Please select an item and then press RETURN.

     <V>iew a card                      <A>dd a card
     <D>elete a card                    <E>dit a card
     <P>rintout design and printing     <M>odify card file design
     <C>hange index list titles         <U>se last card as a new card
                    < UNDO for prior menu >          < 2:16 P >
```

Figure four

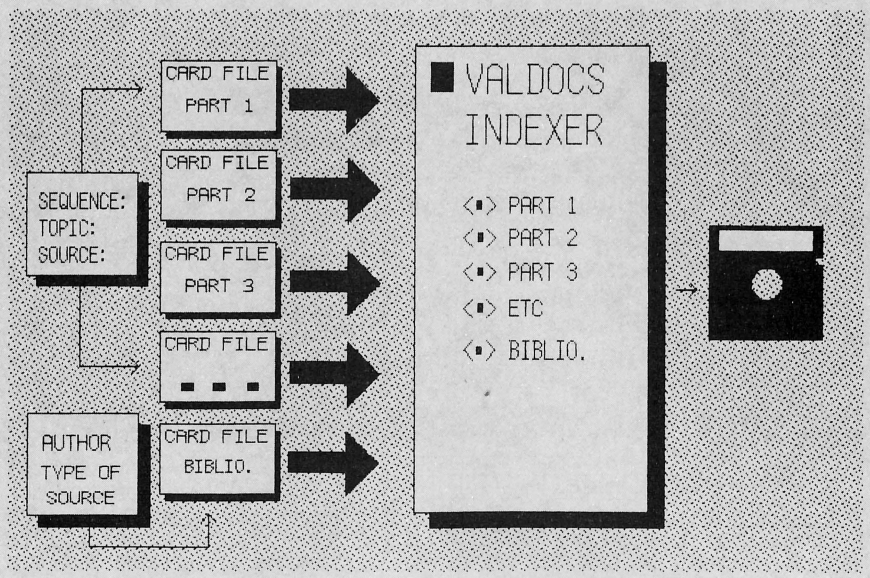


Figure five

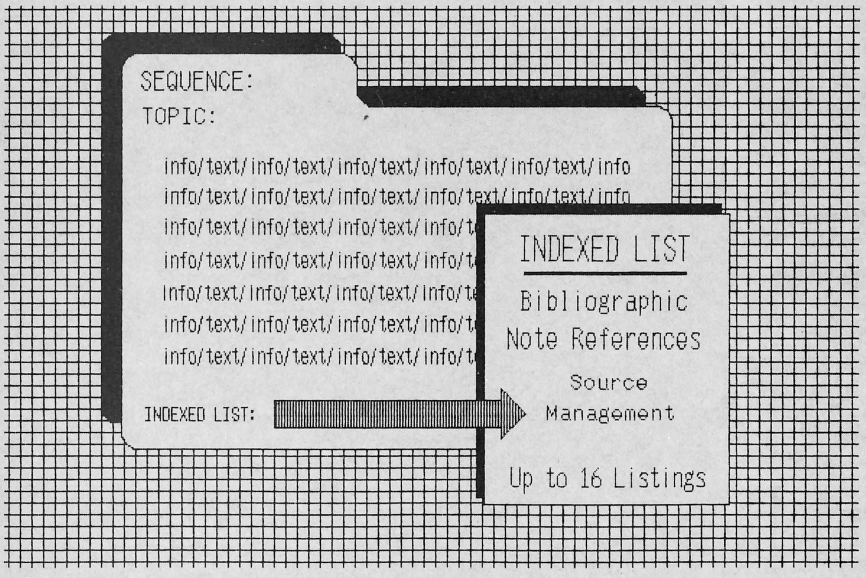
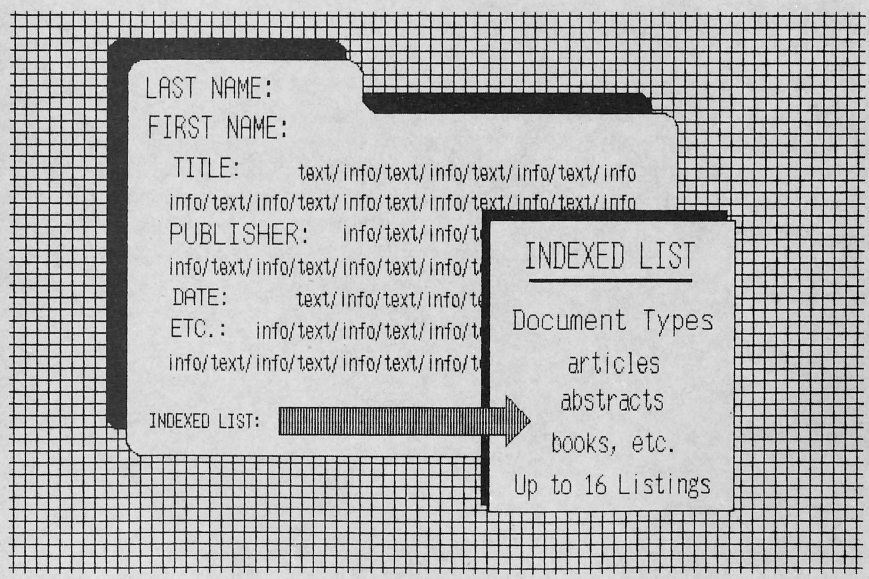


Figure six



CONSIDER THIS

Something to keep in mind, however, is that there is no way in Valdocs to transfer a card file over to the text editor at this time. (Let's hope future releases of Valdocs will be able to pass data more readily from one module to another.) So it's a good idea not to get too carried away with your text on these cards. Outlining is primarily a preliminary writing tool.

Something else to consider — it is helpful sometimes to work backwards. In other words, after you've finished an extensive writing project, it's good to go back and pick out your subject headings and topic sentences to see if you covered everything you should have, tying up all your loose ends.

Don't forget, you can use the Valdocs Draw program to make charts and graphs to back up the statements you'll be making in your text. If you have the Valdocs Valpaint and Valdraw programs, you can create other visual aids to help get your ideas across.

And, you can keep all the files together on the same disk. Of course, if your paper is very long and involved, you'll want to divide the files according to type on different disks.

THE SENSE OF THE FOREST DEPENDS ON EVERY TREE

Some critics of integrated software packages claim that true interface transparency has not been achieved. Anytime a software system requires thinking about how to accomplish a task through the system's structure, it is considered to be an opaque, artificial system.

Valdocs 2 is by far the most transparent user interface I've run across. The modules are consistant and easy to understand and use. Let's face it. Any imposed structure is artificial compared to the facile, fluid way our brains perform. And certainly, no amount of intellectual and intuitive dexterity on the part of a program is going to make anyone a better writer.

Form over content is the deflation of any creative work.

Even though using the Cardfile program for an idea processor or outlining system is a process that involves re-thinking and adjusting to a formal process, I don't think it detracts from the clarity of the Valdocs 2 system in any way. Besides, a tool that provides a new focal point for getting an angle on cogent writing is valuable, no matter what its refractive index is. ●

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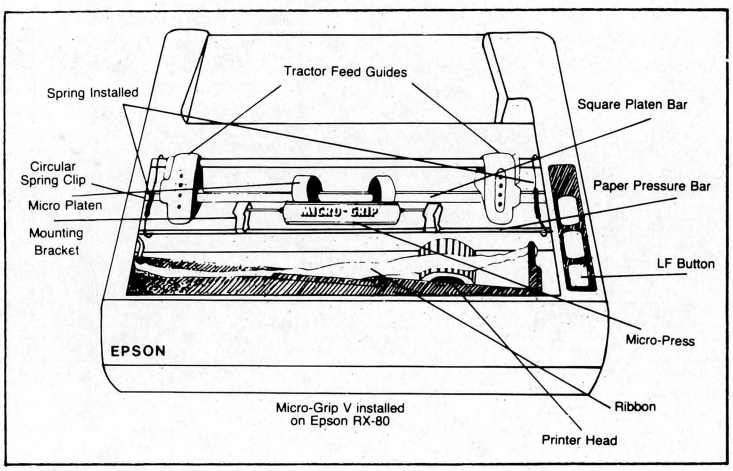
Note: Diagram is not drawn to scale!



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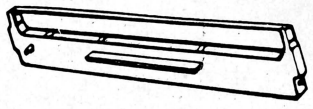

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Unravel the Mysteries of Command Files To Make Your Database Management Tasks Quicker, More Efficient

dBASE II

By Robert Loranger

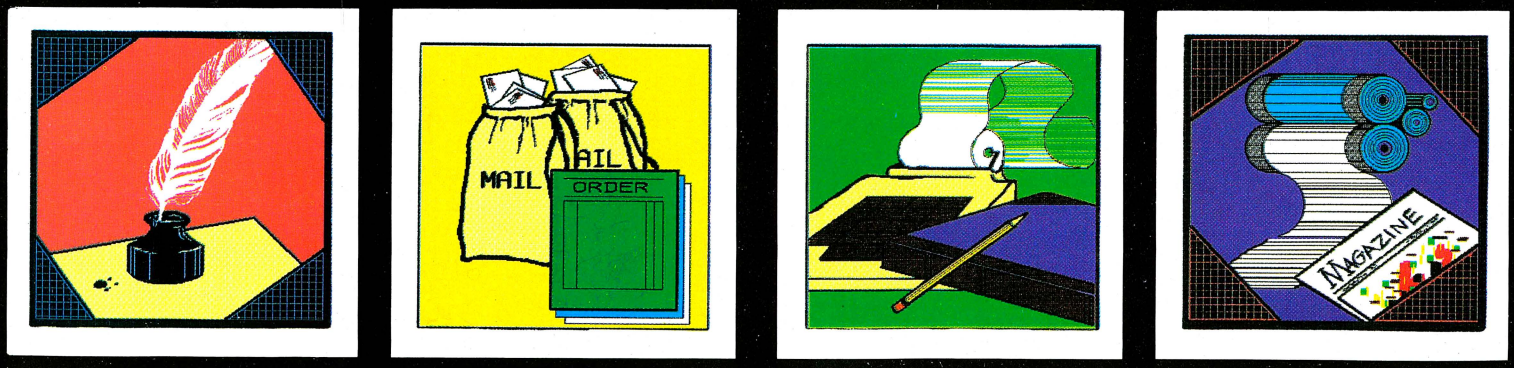
Database management software has emerged as one of the most popular applications on microcomputers, including those from Epson. One of the best-known database management packages is dBase II, developed by Ashton-Tate. Since this program's announcement a few years back, an "update," dbase III, has been released, and competitors have sprung up like so many weeds in yonder field. But dBase II remains almost a generic definition of what database management software for a microcomputer should be.

If you are familiar with running dBase II in the interactive, or dBase II Dot Prompt mode, you might be wondering how to use those command files mentioned in the dBase II manual. You may be curious to see how command files save time and effort by doing the many repetitive, tedious tasks of database management. What steps need be taken to write typical command files that will do such things as present a menu of choices, make data entry and access easier, and print a data report?

Generally speaking, command files are sets of instructions telling dBase II how to manage the information in a database. But before jumping directly into command files, the term "database" should be defined for our purposes. *Continued on page 48*

ILLUSTRATION BY MARJORIE STRAUSS

MAKING MONEY WITH YOUR COMPUTER



Many people have found the QX-10 to be the key to their business ventures. Its ease of use combined with powerful applications software make it a valuable and trusted assistant.

Our special feature this issue is on the topic of "making money with your computer." Many of us use computers at work and sometimes at home as a toy. Some earn extra money with their computer, while a few very brave souls actually earn their livelihood from the keyboard and glowing screen.

As you'll soon read, there are a lot of ways of extracting money from the world by use of the computer. One of the most obvious is to be a writer, and since this is my racket, I'll start by telling you a little about my experiences, then I'll let some other people tell their stories.

WRITING...

By Jim Hansen

I started my writing career with very short articles on computer hardware. I'd pound one out on a portable typewriter then mark it up and rewrite it. My wife did the final proofreading and typing.

I didn't use text processing until I was asked to do a review of the "Word Handler II," a text processor for the Apple computer. I found the system usable in spite of Apple's limited keyboard and screen, and wrote maybe a dozen magazine articles on the Apple.

This came to a stop when I was asked to review a new Japanese computer. That computer, of course, turned out to be the Epson QX-10, and the Apple has done nothing but run games for the kids since.

My Epson relationship has been warm and comfortable. Since the Apple was retired, I've written well over 80 magazine articles, several books and technical manuals. I was recently sponsored into the Authors' Guild.

The QX-10 has never given me a moment's problem, but it must be provided with reliable power. I live in very rural New Boston, New Hampshire where the electricity blinks on and off several times a month. I use a PowerMAX battery backup system to prevent data loss. It'll run the QX-10 for about 15 minutes, enough time to gracefully shut down the system. Except for power hassles, I've never lost

Continued on page 44

ACCOUNTING...

By Bob and Vivian Loranger

Bob and Vivian Loranger, of Merrimack, New Hampshire, found that working at home with computers could make stronger family bonds. Together they operate a commercial bookkeeping and database programming service using their QX-10 from a spare room in their home. Considerable effort was spent locating the right accounting program for their needs, but once it was installed on the QX-10, business took off.

Personal computers sometimes have a way of disrupting family life when one family member gets hooked and seems to develop a better relationship with the computer than with the rest of the family.

But we've found a way to avoid that disruption by working together, with the help of our Epson computer, in an at-home bookkeeping business called Micro Resources.

I am an airline pilot, and have developed a familiarity with personal computers over several years as a home computer hobbyist. I also run a custom database programming service under the Micro Resources name. My wife Vivian is a secretary and bookkeeper who has worked six years for a local CPA.

The bookkeeping business got started

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MAIL ORDER...

By Ben Ellison

Ben Ellison and his wife Elizabeth started with a baby problem in the back woods of Maine one cold winter. The solution resulted in a successful mailorder business using their QX-10s to manage the business. Read on...

I can't recall when I started. I just remember one day finding myself poring over and L.L. Bean invoice. How did they organize their product codes? What sort of marketing information were they collecting with the invoice? How did they design their preprinted invoice/shipping label? Sure, I realized Bean was cranking its elaborate order system through some monstrous mainframe, but I also had a feeling I could make use of some of the same techniques in our micro mailorder business with our Epson microcomputer. And, by this time, I knew our homegrown order entry system was key to our company's efficiency and responsiveness, our ability to grow — in a word, our profitability.

The Baby Bag Company had begun in classic fashion — a good idea born of

Continued on page 45

WORD PROCESSING...

By Pat Hansen

Pat Hansen is the wife of Epson World Consulting Editor Jim Hansen. The Hansen's have two grade school daughters and a dog, but over the last two years Pat has developed a small word processing business. She writes:

While I was a secretary at Dartmouth College I would occasionally type term papers for students after hours and during my lunch breaks. At a dollar a page on my old Royal electric typewriter, I could make three or four dollars an hour — considered good money in those days.

Around 12 years ago I took time off to start our family and I soon discovered that having two girls only a year and a half apart was nearly a fulltime job in itself.

Later, settled in our new home in New Boston, New Hampshire I began to take occasional typing jobs. I eventually traded up from my old Royal to a used Selectric II, but all the while my husband was slowly filling the basement with computer junk. He had trouble understanding why I still used a typewriter when I could do it on a computer. Computers were a mystery to me and I thought it was a lot easier just to use the Selectric. (If you push the "A" key on a typewriter, it *always* prints an "A"!)

THE HOOK

One day the inevitable happened. I got a 50-plus page manuscript and the customer told me it would have to be typed over at least three times. When I told my husband the time had come and I would try the computer he nearly shed tears. I didn't like doing it, but I just couldn't stand the thought of typing that thing more than once.

I sat down in front of the QX-10. I didn't care if I could get that little green glob (I call it a cursor now) to the right side of the line quicker by going to the left and "wrapping", nor was I impressed with the online thesaurus or the spelling checker. All I wanted to do was type the manuscript, print it out, and most of all, leave the basement.

By the time I finished this job, I have to admit I was hooked. I enjoyed the ease with which errors could be corrected and the feeling of control I

Continued on page 46

PUBLISHING...

By Joel Rose

Want to be a publisher? It is fun and although the hours are long and the pay is poor, you do have a chance to discover new authors who may someday change society. Joel Rose and his friends use a QX-10 and Epson printers to publish a unique literary magazine from the East Village in New York City. It is sold in a plastic bag and hand-illustrated; the last two issues (500 copies each) have been instant sell-outs.

THE SETTING

Three o'clock in the morning, pitch black outside, the New York City streets below my apartment windows absolutely silent, my tiny three-year-old daughter stumbles into my room.

"Daddy, I scared. A big, bad witch is in my room."

I groan awake. "Celine, no one's in your room. There's no witch."

"Yes, there is," she cries, fatigue getting the best of her. "Daddy, there is!!"

I gather her in my arms, carry her back to her bed. She demands that we keep the night-light on to protect her from ghosts and goblins. I put her down, gather the covers about her little body, tuck her in, kiss her.

"Daddy, don't go. I don't want to sleep alone. The bad witch will get me. I need a big person to stay with me."

So I lie down next to her. She clutches me, and is immediately asleep. I, however, am absolutely awake. Sleep is not in the game plan for me for the rest of the night. My eyes, wide open, are riveted on the ceiling, and I'm thinking not of witches, nor of goblins, but of my computer.

I am a writer. A novelist and a short story writer. I've also written for TV and the movies. I bought my QX-10 to help me on a book I was compiling for the publisher Facts on File, and was totally captivated and enthralled by the machine. My work had seemed to coalesce, my productivity escalated to giddy heights. But now here, in my daughter's bed, her rhythmic breathing a song in my ear, her arms relaxed but firm around my neck, I suddenly have an idea.

SON OF GUTENBERG

A printing press! I have a printing press in my home.

Actually, we had two. A little background, please ...

Catherine Texier, the woman I live with, is also a writer, a novelist from France. We had shopped assiduously when we decided computers were in

Continued on page 46

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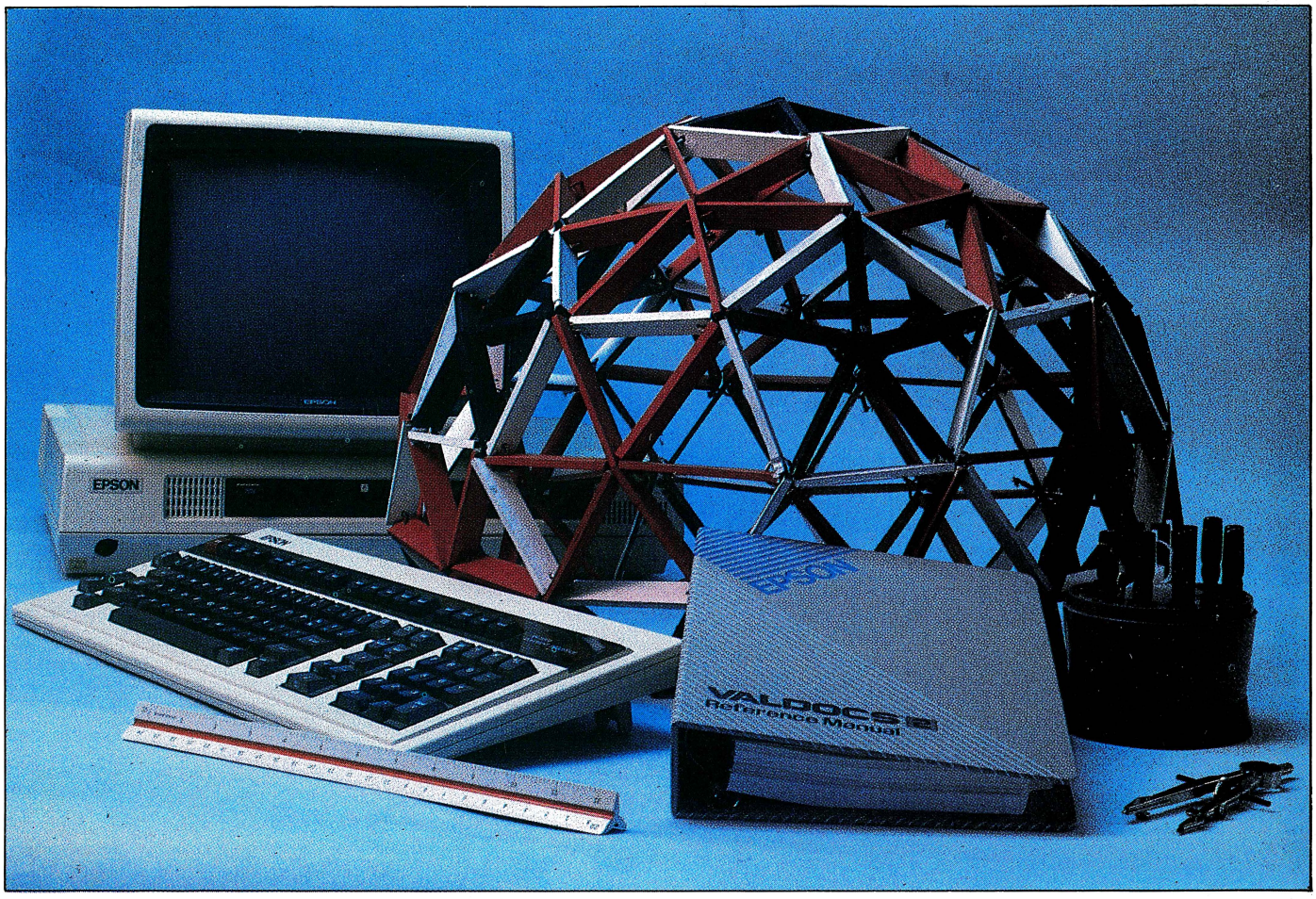

Spreadsheet Geodesics

By Lonny J. Brown

The intricacies of geodesic mathematics are an easy match for the QX-10. With the proper set-up, you, too, can use the machine in project planning.

In the 1960s, when radical innovation touched nearly every facet of our culture, architecture suddenly discovered a new form of design, the Geodesic Dome. Based on a triangulated shell structure that was observable throughout the natural world, and refined to a science by the late visionary design engineer, R. Buckminster Fuller, geodesic architecture revolutionized popular concepts of the form of shelter.

They were first used by scientists and the military in remote locations, where their light weight, speed and ease of construction, and efficient use of energy were of great value. Later, they were adopted as home made homes by some, becoming a symbol of ecological self-sufficiency. Today, the widespread availability of personal computers makes geodesic math and design increasingly accessible, for serious homebuilders, students, and hobbyists alike.

This article and its accompanying

drawings and spreadsheets were all created on an Epson QX-10, using Valdocs 2, Valdraw, and Valpaint. Valdocs' friendly menus guided me through the project, and being able to go from CALC to EDIT in just one keystroke made the double task of designing the geodesic spreadsheet and writing about it eminently manageable. (Carrying the process to its logical conclusion, I am now using the package to design my second dome-home.)

IT'S ONLY NATURAL

Based on the most stable shape in the universe, the rigid triangle, and its three-dimensional projection, the tetrahedron or "pyramid," a geodesic dome can be best understood as a network of interlocking arches. These arches are, as described first by Fuller, "omni-triangulated." Such a configuration not only holds itself well, but responds superbly to extra stresses. When an object is dropped on a dome, the shock load is dispersed and distributed equally among all the interconnecting members. Damage is localized, with no major structural failure, since the shock travels through a web of compression lines; there is no perpendicular break-force as with horizontal structures. The cornerless

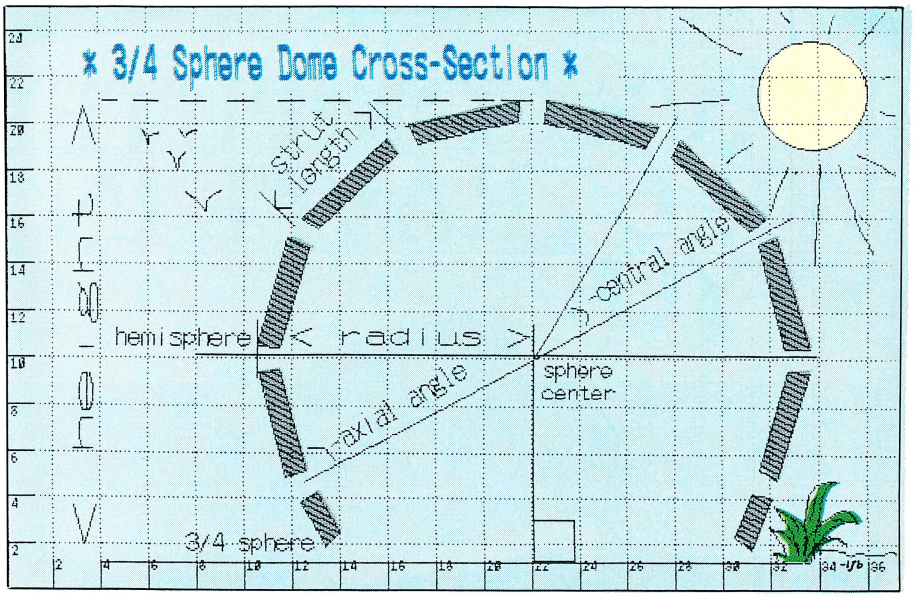

Figure 1. Elements of the Geodesic Sphere

shape of domes also offers less wind resistance than block-shaped building forms, and creates maximum air and heat convection.

The uniqueness of geodesic architecture lies in its basis in pure mathematics. Numerous examples of "triangulated spherocity" appear in nature. Colonized marine micro-organisms, protein structures, mineral crystalization, and co-valent bonding are typical. But it took the development of spherical trigonometry to decipher and replicate the form. There are no right angles in a dome.

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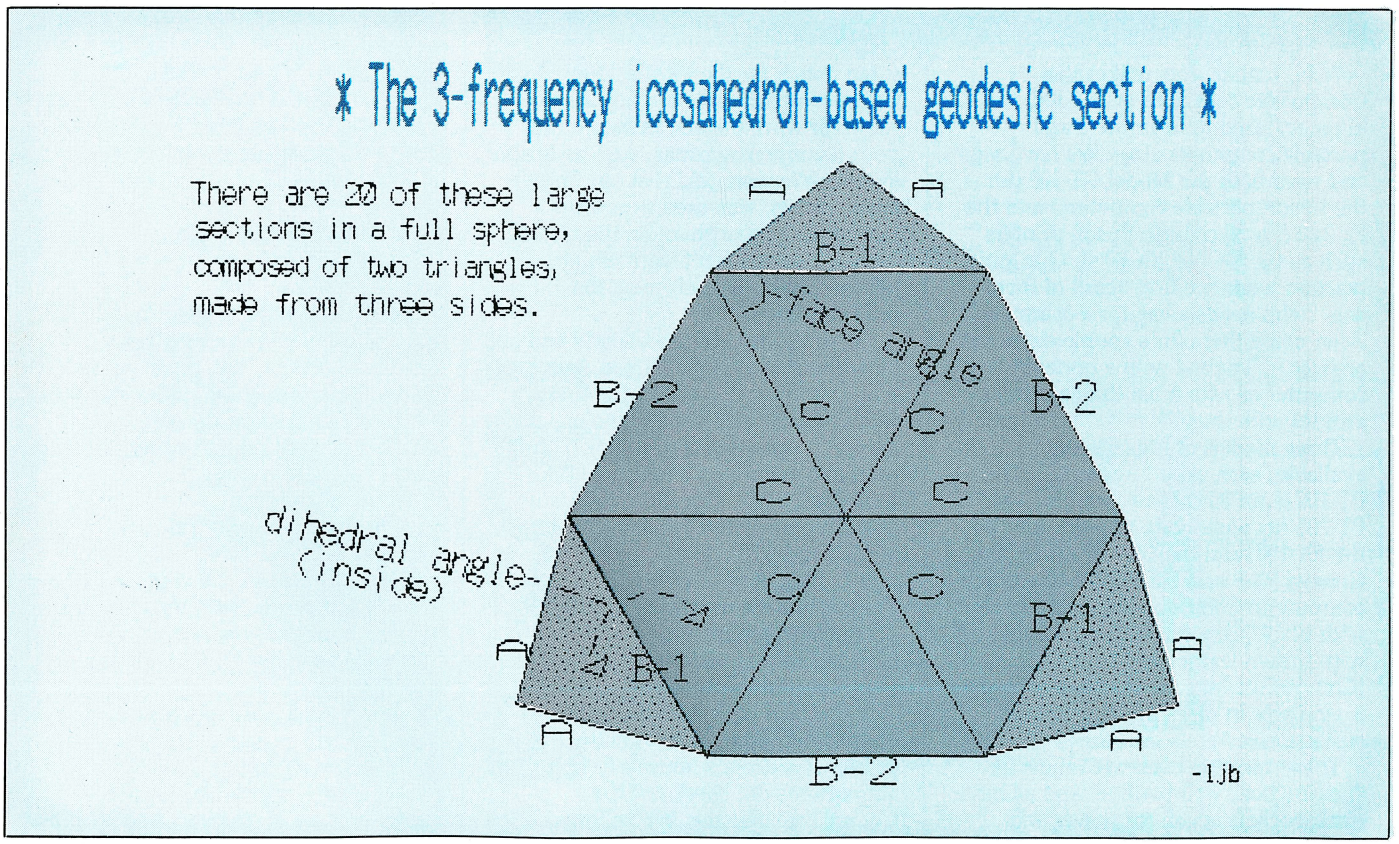
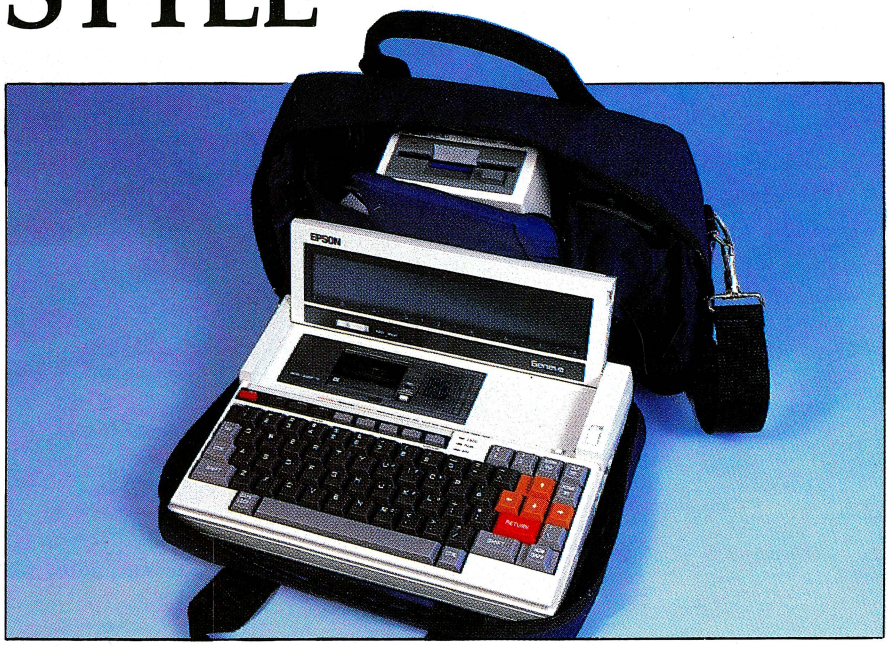


Figure 2.

HAVE COMPUTER, WILL TRAVEL IN STYLE



W.H. Janhke, Inc. makes the CompuTote collection of padded luggage, sized to fit printers and portable computers alike. We have seen and used both the Model GT-100 (for the Epson portable computers) and the PT-100 (for 80-column Epson printers such as the FX and RX-80's). Our initial reaction when we first heard of them was "who needs a bag for a computer?" After using them for a couple days, our answer is "anyone with a portable computer or who must drag a printer around with them."

Three models of luggage are available, each priced under $75. The PT-100 is for 80-column printers, the PT-201 fits wide-body printers such as the FX-100, and the GT-100 carries the Geneva PX-8 and HX-20/HX-40 portable computers. Color options are navy blue with black leather and trim and tan with brown leather and trim. (CompuTote luggage for other systems is available in cases up to the "large suitcase size.")

These carrying cases are robust in construction, well-padded, and all have extra pockets inside for power and interface cables and other computer accessories. The GT-100 has a specially fitted pouch for the PX-8's floppy disk. Other compartments provide ample room for work papers, manuals and your favorite magazines, such as Epson World. (We were told that our first issue, in fact, was used to size the magazine compartment on the GT-100 case ... careful, don't want to get blisters patting ourselves on the collective back.)

Certainly, we at Epson World will not be without our GT-100 again! And while we must confess that at first we thought such accessories frivolous in nature, it only took a day or two on the road to convince us otherwise. Take a fully-loaded briefcase, add one PX-8 and floppy, stir in a trip through an airport and what do you get? Tired, that's what. And what's worse, the Geneva will eventually suffer battle scars from such treatment. The CompuTote bag and its broad shoulder strap solve both problems.

If you take your portable computer on business trips, or frequently drag a printer to a client's house as many accountants do, check out the CompuTote luggage. We've found it useful. W.H. Jahnke, Inc., PO Box 953, Naperville, Ill 60566. 800-323-2748.

Letter Quality Printing on an FX/RX-80

If you are the owner of an RX or FX series Epson printer and have been put off by the price of the Epson letter quality printing upgrade, take a look at the Finger Print LetterWriter kit. This upgrade is available for both FX-80 and FX-100 printers ($79.95), and by September 1, a version will also be available for the Epson RX series printers ($59.95).

The Finger Print kit consists of two integrated circuits and installation instructions for replacing the corresponding IC's in your printer. Use of Finger Print does not invalidate your Epson warranty, and you'll be amazed at what your humble FX-80 printer can do after it is installed. It's as good or better than LQ-1500 output.

Installation takes about five or ten minutes and consists of removing the printer cover, replacing two integrated circuits, adjusting a jumper option inside the printer, and closing it up again. Once this is done, the printer has 16 printing functions that can be selected by the buttons on the printer or under software control.

These functions include two-pass, very-near-letter-quality printing, emphasized, underline, italic, elite, condensed, fine print and more. Finger Print is compatible with Valdocs, but the real benefits it offers are the super-high-quality print mode and push-button control over all the print modes. Normal software control of the printer is still available, but sometimes it is quicker and easier to do it by hand.

Two switch-selectable options provide IBM graphics and Apple printer emulation. These options are set inside

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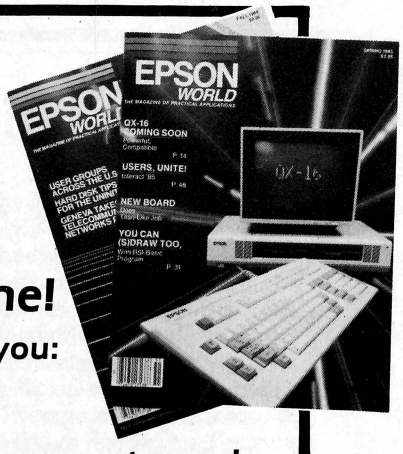

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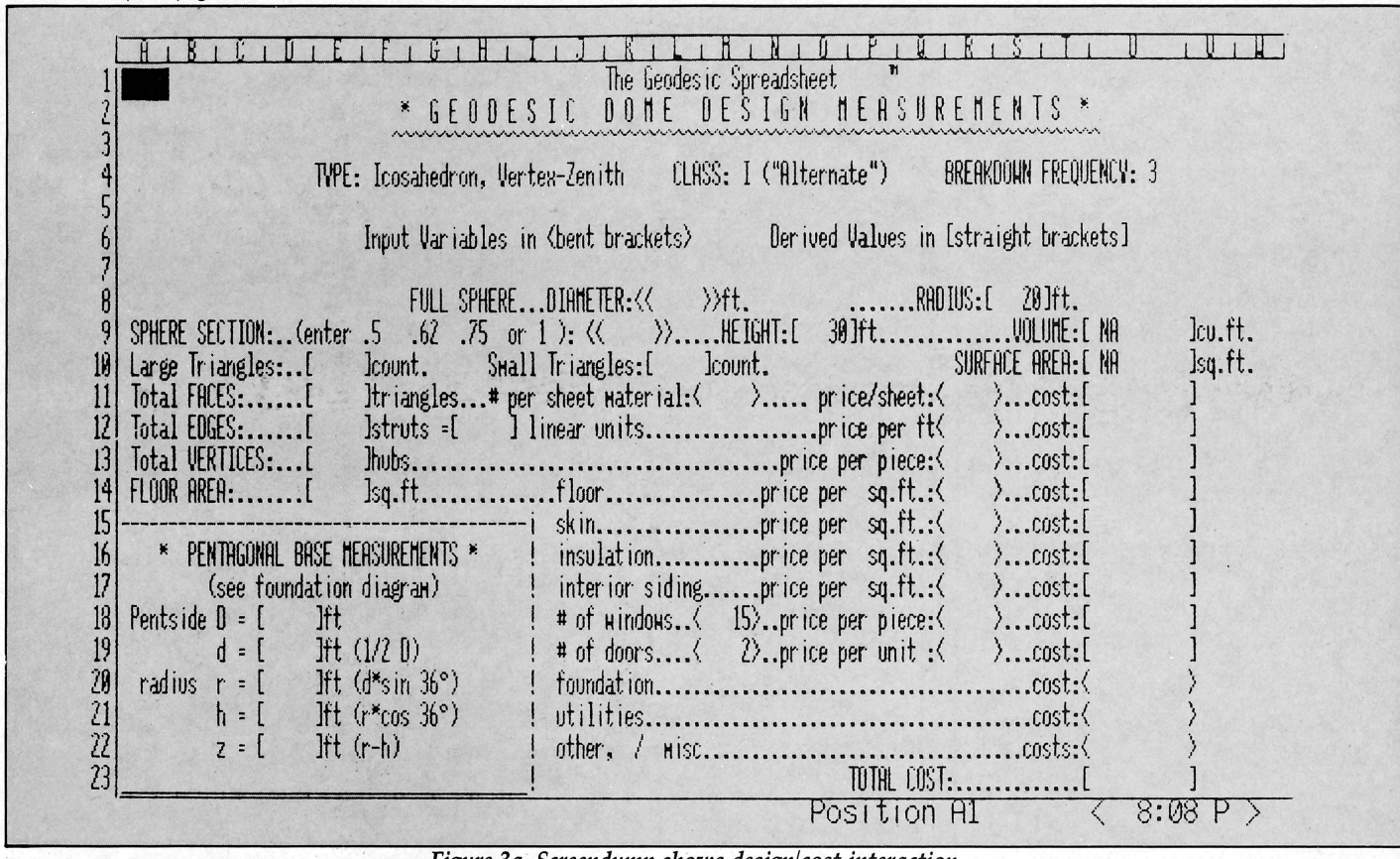


```
   A  B  C  D  E  F  G  H  I  J  K  L  M  N  O  P  Q  R  S  T  U  V  W
1                          The Geodesic Spreadsheet
2                  * GEODESIC DOME DESIGN MEASUREMENTS *
3
4          TYPE: Icosahedron, Vertex-Zenith    CLASS: I ("Alternate")    BREAKDOWN FREQUENCY: 3
5
6                  Input Variables in <bent brackets>      Derived Values in [straight brackets]
7
8                       FULL SPHERE...DIAMETER:<<    >>ft.          .....RADIUS:[  20]ft.
9  SPHERE SECTION:..(enter .5  .62  .75  or 1 ): <<    >>.....HEIGHT:[  30]ft.............VOLUME:[ NA      ]cu.ft.
10 Large Triangles:..[    ]count.     Small Triangles:[    ]count.                SURFACE AREA:[ NA      ]sq.ft.
11 Total FACES:.....[    ]triangles...# per sheet material:<    >..... price/sheet:<    >...cost:[      ]
12 Total EDGES:.....[    ]struts =[    ] linear units.....................price per ft<    >...cost:[      ]
13 Total VERTICES:..[    ]hubs.....................................price per piece:<    >...cost:[      ]
14 FLOOR AREA:......[    ]sq.ft.............floor.................price per  sq.ft.:<    >...cost:[      ]
15 ----------------------------------------! skin.................price per  sq.ft.:<    >...cost:[      ]
16    * PENTAGONAL BASE MEASUREMENTS *     ! insulation...........price per  sq.ft.:<    >...cost:[      ]
17       (see foundation diagram)          ! interior siding......price per  sq.ft.:<    >...cost:[      ]
18 Pentside D = [    ]ft                   ! # of windows..<  15>..price per piece:<    >...cost:[      ]
19         d = [    ]ft (1/2 D)           ! # of doors....<   2>..price per unit :<    >...cost:[      ]
20  radius r = [    ]ft (d*sin 36°)       ! foundation.....................................cost:<      >
21         h = [    ]ft (r*cos 36°)       ! utilities......................................cost:<      >
22         z = [    ]ft (r-h)             ! other, / misc.....................................costs:<      >
23 ----------------------------------------!                          TOTAL COST:.....[      ]
                                                                  Position A1      < 8:08 P >
```

Figure 3a. Screendump shows design/cost interaction

Setting Up Your Geodesic Spreadsheet

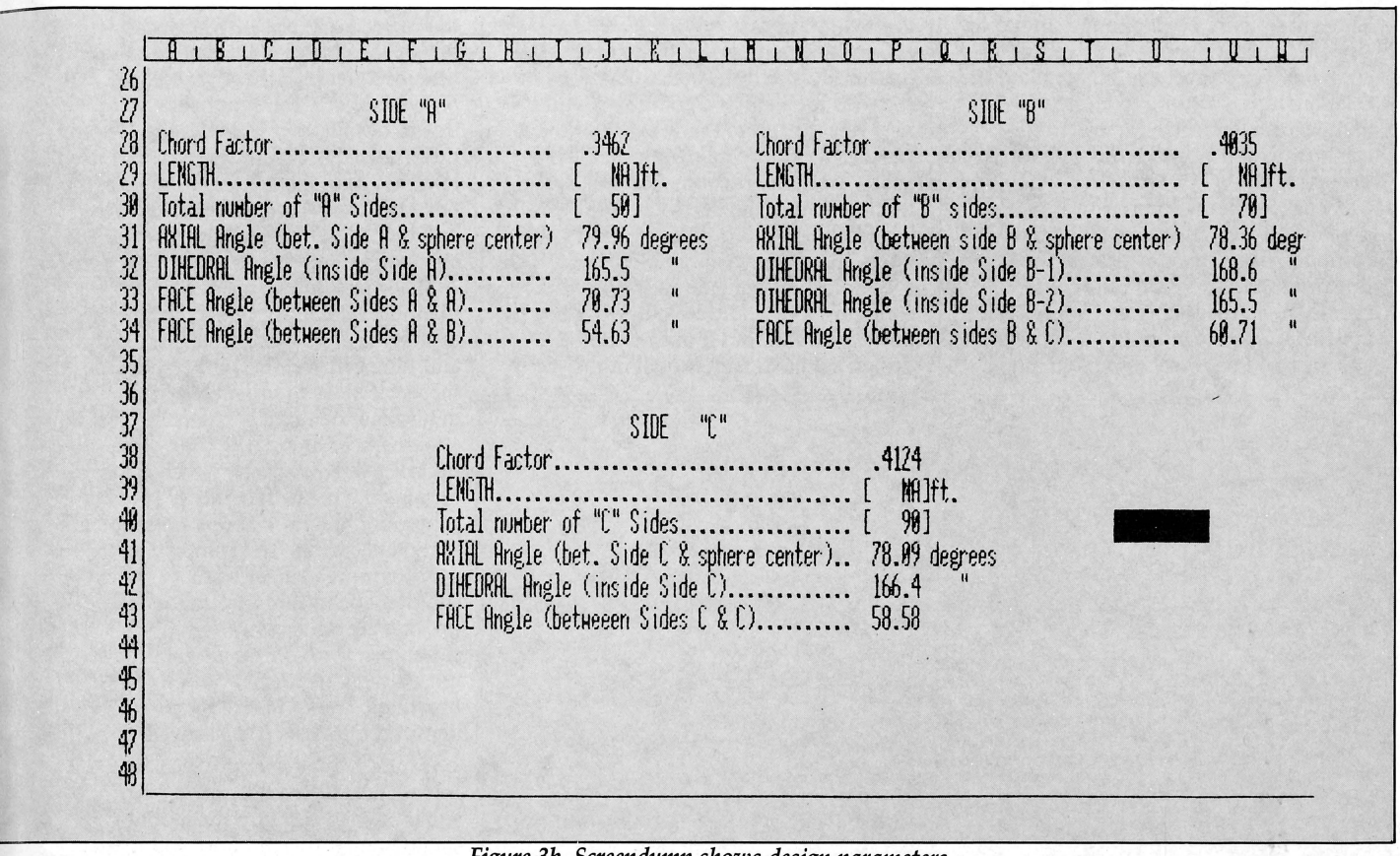
1. Begin by constructing a blank spreadsheet as shown in Figure 3. Use the same cell coordinates and labels. For maximum on-screen display, the Valdocs 2 spreadsheet can be condensed to half-width by using the SIZE key. Spreadsheet formatting, either globally or for specified cells or columns, is done through CTRL/O (for *onscreen*), or through the HELP key. Choose five characters per cell, but reformat column U at double width to accommodate larger numbers. (Valdocs will fill a cell with ***** when the number of digits is out of range.) Other formatting options include automatic dollar signs in the appropriate price and cost cells, alignment, and number of decimal places. *N.B.* For those who would like to avoid these steps, a disk containing the author's program is available for $15. Lonny Brown, Box 83, Old Mountain Rd., Greenfield, NH 03047

2. Enter the numbers given for chord factors and the various angles. These are critical, so write-protect them, using CTRL/O. This is a good time to make a safety copy by STORE-ing and RETRIEVE-ing it once. Actually, Valdocs 2 is designed to eliminate the need to do this, by copying to disk everytime you stop typing.

3. Now you are ready to impart to the geodesic spreadsheet its invisible architectural talents, by installing the *embedded formulas* (Figure 4) behind the cells with straight brackets, [ ] (Figure 3). These mathematical and logical statements describe how the variable parameters in the triangulated sphere relate. They have been configured to compute all the values necessary to design and build a three-frequency geodesic dome of any size, and with any one of four different sphere cut-off levels. The formulas must be copied exactly as they are shown and in the same places, as they are interactive by location names.

The Valdocs 2 spreadsheet reveals its computational powers through the CALC key. Press it once and your equation is started on the bottom of the screen. Press CALC again and you have the full battery of calculation functions at your disposal, including pointer-selection of other operating cells. A RETURN stores the computation. Test it by hitting CALC (which will show the formulas at the bottom of the screen) and RETURN, which will then execute it. When a variable referred to is not available, the spreadsheet will return NA or ERROR instead of a numerical value.

4. Now you can input your choices for a customized dome. In this particular spreadsheet the diameter and sphere section are the input variables (in <<>>). You could also conceivably make the diameter or radius dependent on, for example, an exact size triangle face, to minimize plywood waste. This would require



	SIDE "A"		SIDE "B"	
28	Chord Factor.....	.3462	Chord Factor.....	.4035
29	LENGTH.....	[NA]ft.	LENGTH.....	[NA]ft.
30	Total number of "A" Sides.....	[50]	Total number of "B" sides.....	[70]
31	AXIAL Angle (bet. Side A & sphere center)	79.96 degrees	AXIAL Angle (between side B & sphere center)	78.36 degr
32	DIHEDRAL Angle (inside Side A).....	165.5 "	DIHEDRAL Angle (inside Side B-1).....	168.6 "
33	FACE Angle (between Sides A & A).....	70.73 "	DIHEDRAL Angle (inside Side B-2).....	165.5 "
34	FACE Angle (between Sides A & B).....	54.63 "	FACE Angle (between sides B & C).....	60.71 "

	SIDE "C"	
38	Chord Factor.....	.4124
39	LENGTH.....	[NA]ft.
40	Total number of "C" Sides.....	[90]
41	AXIAL Angle (bet. Side C & sphere center)..	78.09 degrees
42	DIHEDRAL Angle (inside Side C).....	166.4 "
43	FACE Angle (betweeen Sides C & C).....	58.58

Figure 3b. Screendump shows design parameters

writing the formulas in reverse order. Diameter means the full-sphere width, through the sphere center. The diameter of the dome and choice of Sphere Section are the only two inputs absolutely necessary to run the spreadsheet. Others, such as various materials prices, number of windows, and the like, are optional. Note that there are four natural cut-off sections in this dome configuration. Usually given as fractions, they must be converted to decimal values in order to be used in computations by the spreadsheet. Thus, hemisphere becomes .5, 5/8-sphere become .62, 3/4-sphere becomes .75, and full sphere becomes 1.

Note that the formulas that are dependent upon this variable are written as complex "if-then" symbolic logic statements rather than mathematical calculations. A good example of how the spreadsheet works is the computation to derive strut lengths for a dome of given diameter. Locate an A side in Figure 2, or the black struts in Figure 6. There are 85 of these in a full sphere. To determine their length, place the cursor over the cell labeled "Length Side A" (J29 in Figure 3) and hit CALC.

If you haven't already, Valdocs will ask you to write the formula for this cell. It happens to be the product of the radius and the chord factor for Side A. You refer to these components by their cell numbers, so type in: J29=J28*S8. Hit RETURN. If the RADIUS value is still empty, the dependent variable (length) cell will read NA after trying to execute the computation.

Test the function by putting in a hypothetical radius of 18 in cell location S8, and see if you get a length of 6.231 for the A sides, at J29. If you don't, check your embedded formula, chord factor, and cell locations against the masters given (Figures 3 and 4). Use them to enter in all the formulas as indicated.

The spreadsheet can be set up through the miscellaneous menu, CTRL/M, to refigure all dependent variables automatically, instead of requiring a manual return to each separately. This takes a lot of time, though, since the computer is checking and refiguring every cell in the spreadsheet. It takes about four minutes for the QX-10 (without hard disk) to return updated data for the whole spreadsheet, from radius to total cost. It will do this every time you make an entry. For speed, when working with individual cells, you can leave the automatic calculation feature off, but don't forget to recalculate all the individual cells that are chained together for any one formula. For instance, after changing the diameter, you won't get a correct updated strut length without first recalculating the other dependent variable, the radius.

When you have completely programmed your spreadsheet, turn on the automatic recalculation and watch it respond to design requests. The wonders of geodesic architecture and microcomputing have been integrated into a design tool that is both fascinating and practical.

There are plenty of compound angles of varying measurements, involved in complex, yet predictable, mathematical relationships. In sum, geodesic architecture lends itself to electronic calculation and computer-assisted designing.

As far as I know, there is no general-market software made for computer-aided geodesic design work. But with a versatile computational spreadsheet, diagrams, and some basic instruction, you can design a dome of any size and be ready to build a model of it within hours.

Geodesic math is not difficult to master, despite its esoteric flavor. Even so, with the help of a computer, you may never need to know exactly how it works. By simply following the Setup/Input instructions that follow, then matching the derived values with labeled illustrations, you will find your dome's design measurements.

Because I'm quite familiar with the configuration, and it is somewhat of a popular standard, I'll use my dome design as the default model in the following program. (If you want to know, the design is known as a Class I, three-frequency Icosahedron-based, regular sphere. But you needn't know this to design your own dome.) Once the spreadsheet is set up, it can be used to create any size sphere, from a table-top model to a commercial building. It will even show how design changes will affect costs.

Major factors to consider when planning a building project include desired size, material costs, and labor and time constraints. With geodesics, these variables interdependently determine the dome's relative spherocity or angularity (called the *frequency* or *breakdown*), which in turn dictates the measurements of the compound angles where strut members and panels meet. The completed geodesic spreadsheet will simultaneously and instantaneously provide all values for "what-if" situations. The computer will produce not only mathematical values, trig functions, angles and lengths, but itemized materials costs as well.

Want a higher ceiling? Check the spreadsheet to see how big a strut you'll have to carry up the ladder single-handedly! And how will it affect your snow-load strength, or does this matter? Adding more windows? The spreadsheet will automatically reduce your siding and insulation requirements accordingly. Need to know what size wood stove to buy? Ask the spreadsheet for interior volume, insulation R-values, or solar gain. Any parameters that can be accounted for in a formulated relationship to a mathematical sphere can be built into the geodesic spreadsheet.

Embedded Formulas
for the
Geodesic Spreadsheet

```
name              generic formula        written configuration *

RADIUS.........= 1/2 Diameter:.....................................S8=L8.2
SECTION HEIGHT.= Diameter x Sphere Section:.....................O9=L8*K9
VOLUME.........= 4/3 PI x R cubed (full Sphere)
                      x (sphere section):.........U9=1.33*@PI*(S8*S8*S8)*K9
SURFACE AREA...= 4 PIxR squared (full sphere)
                    x (sphere section).............U10=4*@PI*(S8*S8)*K9
NUMBER OF LARGE TRIANGLES IN DOME.....
                .....E10=@IF(K9>.7,@IF(K9=.75,90,120),@IF(K9=.62,75,45)
NUMBER OF SMALL TRIANGLES IN Dome.....
                                ....L10=@IF(K9>.7,@IF(K9=.75,45,60),30)
TOTAL TRIANGULAR FACES.....
              .....E11=@IF(K9>.7,@IF(K9=.75,135,180),@IF(K9=.62,105,75))
COST OF TRIANGLES...(#of pieces into standard material x price).....U11=(E11.M11)*R11
TOTAL NUMBER OF EDGES (struts).........................E12=J30+V30+P40
Total Length of all Edges.............H12=(J29*J30)+(V29*V30)+(P39*P40)
Cost of Struts.= ......total of lengths x price.............U12=H12*R12
TOTAL VERTICES.........determined by cut-off section (logic formula:).....
                .....E13=@IF(K9>.7,@IF(K9=7.5,80,92),@IF(K9=.62,62,47))
COST OF HUBS...=..number x price.........................U13=E13*R13
FLOOR AREA.....=....PI x radius squared.(floor radius, varies with sphere section).....
                                .....E14=@PI*(S8*S8)-((L8*K9)*(L8*K9))
FLOOR COST.....=....area x price/sq.unit.................U14=E14*R14
SKIN COST......=......surface area, minus windows, x price/sq.unit.....
                                ....U15=(U10-(((V29*V29)/4)*M18))*R15
INSULATION COST........".....".........U16=(U10-(((V29*V29)/4)*M18))*R16
INTERIOR SIDING COST...".....".........U17=(U10-(((V29*V29)/4)*M18))*R17
WINDOWS COST...=.........number x price.....................U18=M18*R18
DOORS COST.....=.........number x price.....................U19=M19*R19
TOTAL COST.....=..........sum of costs.................U23=@SUM(U11:U22)
SIDE "A" LENGTH=.......chord factor x Radius.................J29=J28*S8
TOTAL NUMBER OF "A" SIDES..determined by cut-off section (logic formula:)....
                                .....J30=@IF(K9>.7,@IF(K9=.75,50,85),30)
SIDE "B" LENGTH=..........chord factor x Radius.............V29=V28*S8
TOTAL NUMBER OF "B" SIDES.....(logic formula:).....
                .....V30=@IF(K9>.7,@IF(K9=.75,75,90),@IF(K9=.62,60,40))
SIDE "C" LENGTH=..........chord factor x Radius.............P39=P38*S8
TOTAL NUMBER OF "C" SIDES.....(logic formula:).....
              .....P40=@IF(K9>.7,@IF(K9=.75,90,120,),@IF(K9=.62,80,50))
```

** In order for the spreadsheet to work, these characters must be entered exactly as they appear (including multiple parentheses), and in the indicated cell-locations. Note that VALDOCS does not offer notation for exponential powers (squared, cubed, etc), so the function must be written out as multiplication.*

Figure 4. Entry data: the inner intelligence of the Geodesic Spreadsheet

TERMINOLOGY

Since geodesic domes are made of rigid triangles, their construction involves determining lengths of sides — also known as *edges, struts, or members* — and angles. (See Figures 1 and 2.) On a dome, an angle within one traingular face is called a *face angle.* The inside (included) angle at which two faces meet is called the *dihedral,* and the angle between a side and the center of the sphere is known as the *axial angle.* Subtract it from 90 degrees to find the angle to cut off the strut ends. The *central angle* is at the true center of the sphere, as described by adjacent vertices on the surface (see Figure 2).

The *chord factor* is a "pure number" that describes the uniquely geodesic relationship between the radius of the dome and a strut length. In geodesic

dome design, there are as many chord factors as there are different strut sizes; our spreadsheet model uses three. Multiply the radius by the chord factor to get the edge length (in the same units as the radius). Once set up, your spreadsheet will do this and all other figuring for you.

The "magic" chord factor can be located on computer-generated tables. Since chord factors are constant, we will tell Valdocs to write-protect them after they're installed in the spreadsheet. We can do the same for the given angles particular to our dome configuration.

The frequency, or breakdown, of a dome is the number of segments subdividing the sides of the regular polyhedron on which it is based — in our case, the icosahedron, into thirds. It determines the relative spherocity or angularity, as mentioned above. A higher frequency means more and smaller triangular faces, more and shorter struts, and more hubs or vertices. In dome structures the hubs are the joints, the struts are the bones, and the panels are the skin.

The two main dome-building systems are *Frame and Skin* and *Panels*. In the former, an open frame or grid is erected by joining strut ends (requiring some type of hub system), and then covered. In the latter, the triangles themselves are the construction modules, joined edgewise (creating the dihedral angle). In a building, these may be triangular plywood panels, foam-core stressed sandwiches, windows, doors, or solar collectors.

In addition to strut lengths and angles, it is also important to know how many faces, edges, and corners are needed. This depends on the choice of sphere segment. Our spreadsheet offers the natural cut-off sections of the three-frequency configuration: .5, .625, and .75, as well as full sphere. Notice that the floor area value will also automatically vary with the sphere segment.

A MAN, A PLAN, A DOME

Real computer-aided design, or CAD, is more than just computations. We can imagine a program that offers on-screen modeling, complete with illustrations to scale, and even "walk-through" moving graphics. Such power is still way beyond our dome-building process. But spreadsheet dome design renders the intermediate task of model-building into something that is sheer fun. Because it is modular, scale models and design prototypes can easily be made out of cardboard, balsa wood, plywood, even such commonplace materials as rubber bands and paper clips.

Once ready to build, input the desired diameter, in your chosen units of length, then cut and bend materials to size accordingly. It will help to have a compass, ruler, and protractor. Color-coding can't hurt, either, and in fact allows you to see the underlying geodesic patterns. For example, the black struts in Figure 6 correspond to the "A" sides in Figure 2.

Note that all edge lengths are given vertex to vertex; if your system calls for hubs, you must subtract the hub radius at both ends to get real strut lengths. The spreadsheet can be instructed to do so automatically.

The implementation of the spreadsheet is outlined in the accompanying article. When completed, you'll have a plan that looks something like Figure 5 — a printout of all dome parameters and values for a given configuration, suitable for presentation to design clients, a potential mortgager, or proud relatives and understanding friends. Good luck! ●

The Geodesic Spreadsheet

* GEODESIC DOME DESIGN MEASUREMENTS *

TYPE: Icosahedron, Vertex-Zenith CLASS: I ("Alternate") BREAKDOWN FREQUENCY: 3

Input Variables in ⟨bent brackets⟩ Derived Values in [straight brackets]

FULL SPHERE...DIAMETER:⟨⟨ 40⟩⟩ft.		.....RADIUS:[20]ft.	
SPHERE SECTION:..(enter .5 .62 .75 or 1): ⟨⟨ .75⟩⟩	.....HEIGHT:[30]ft.	.....VOLUME:[	25070]cu.ft.
Large Triangles:..[90]count.	Small Triangles:[45]count.	SURFACE AREA:[	3770]sq.ft.
Total FACES:.....[135]triangles	...# per sheet material:⟨ 1.25⟩	..... price/sheet:⟨ $14⟩...cost:[	$1458]
Total EDGES:.....[210]struts =[1653.]	linear units	.....price per ft⟨ $2⟩...cost:[	$3307]
Total VERTICES:...[80]hubs		.....price per piece:⟨ $4⟩...cost:[	$320]
FLOOR AREA:.....[1156.]sq.ft.		.....floor.....price per sq.ft.:⟨ $8⟩...cost:[	$8675]
		skin.....price per sq.ft.:⟨ $1⟩...cost:[	$3770]
* PENTAGONAL BASE MEASUREMENTS *		insulation.....price per sq.ft.:⟨ $3⟩...cost:[	$11310]
(see foundation diagram)		interior siding.....price per sq.ft.:⟨ $2⟩...cost:[	$7540]
Pentside D = [21.02]ft		# of windows..⟨ 15⟩..price per piece:⟨ $45⟩...cost:[	$675]
d = [10.51]ft (1/2 D)		# of doors....⟨ 2⟩..price per unit :⟨ $89⟩...cost:[	$178]
radius r = [17.88]ft (d/sin 36.)		foundation.....cost:⟨	$2300⟩
h = [14.46]ft (r*cos 36.)		utilities.....cost:⟨	$1100⟩
z = [3.415]ft (r-h)		other, / misc.....costs:⟨	$1500⟩
		TOTAL COST:.....[	$42132]

SIDE "A"		SIDE "B"	
Chord Factor.....	.3462	Chord Factor.....	.4035
LENGTH.....	[6.924]ft.	LENGTH.....	[8.071]ft.
Total number of "A" Sides.....	[50]	Total number of "B" sides.....	[70]
AXIAL Angle (bet. Side A & sphere center)	79.96 degrees	AXIAL Angle (between side B & sphere center)	78.36 degr
DIHEDRAL Angle (inside Side A).....	165.5 "	DIHEDRAL Angle (inside Side B-1).....	168.6 "
FACE Angle (between Sides A & A).....	70.73 "	DIHEDRAL Angle (inside Side B-2).....	165.5 "
FACE Angle (between Sides A & B).....	54.63 "	FACE Angle (between sides B & C).....	60.71 "

SIDE "C"	
Chord Factor.....	.4124
LENGTH.....	[8.248]ft.
Total number of "C" Sides.....	[90]
AXIAL Angle (bet. Side C & sphere center)..	78.09 degrees
DIHEDRAL Angle (inside Side C).....	166.4
FACE Angle (betweeen Sides C & C).....	58.58

Figure 5. Condensed print-out of the spreadsheet (without rulers), configured and activated for a hypothetical 40-ft. 3/4-sphere dome, with plywood siding.

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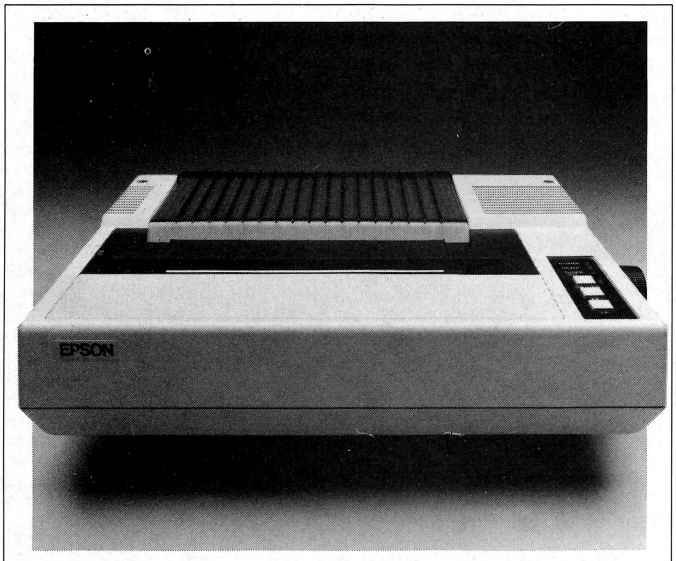

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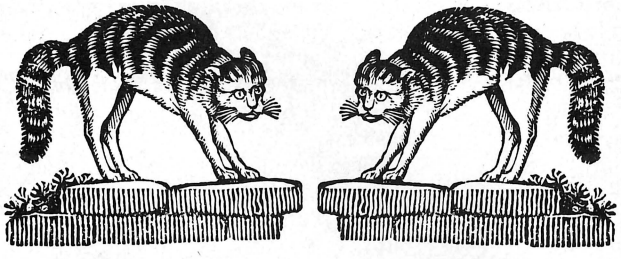

Recently in Martinez, California, two cats knocked an FX-80™ printer 4 feet onto a tile/concrete floor. Although it didn't land on its feet, it is still running.

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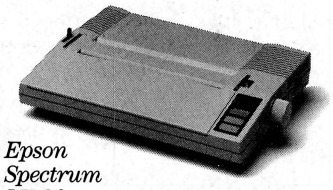

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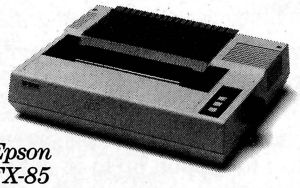

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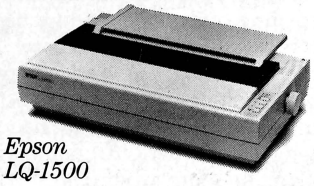

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Continued from page 31

a character on my QX-10.

You may wonder about the text processor I use. Before telling you, let me explain that I am what you might call a "production" writer. My kind of writing requires double-spaced text, wide margins and an occasional underscore. When writing, I sit in front of the tube and watch words appear. I'll shuffle them around a bit, store them to disk, then do an editing pass or two. Speed and response are important to me and any delay becomes a distraction. If I want to move a paragraph or search and destroy some phrase, I want it done instantly. I am not interested in "typesetting" a letter or document; I simply want to get words on paper (or disk) as quickly as possible so someone else can read and edit them; they go about making it look pretty.

So here it is folks ... I use PeachText. Why? It's fast, responsive, and the price was right — it came free with my computer. I'd like to run it under TPM for better disk handling, but for whatever reason, either the screen won't clear or the editing and function keys are messed up. So I'm stuck with CP/M 2.25. I use a floppy-based system.

THE WRITER'S LIFE

People sometimes ask how they can get started in writing.

Some suggestions:

- Pick a topic you know something about, then sit down and don't move until you at least fill the screen. The first paragraph is often the hardest, so start in the middle if you have to, or begin by just typing random notes on the topic. One of the advantages of a word processor is that there's no penalty for not "writing in sequence".
- Say it, don't write it. People tend to get "official" when they write. Have your writing sound like talking.
- Make sure you include at least a drawing or picture with your submission. The picture should either include details of what you are talking about or a human.

How much do you get paid? Rates vary, but in the computer magazine field you should get somewhere between $100 to $150 per printed page. Technical writing for experienced authors with a track record usually pays $25 to $30 an hour, and depending on difficulty, a reasonable sized manual will typically earn you something over $10,000.

Real books, as impressive as they are, don't pay that well until you hit the best seller list. Royalties are usually 10 to 15 percent of the wholesale price. (Computer books are wholesaled at about 45% off retail.)

Not many can make writing a full-time job, but there's good extra money to be had for the part-timer who persists long enough to sell that first article. It's all downhill from there. ●

Continued from page 31

after Vivian's boss mentioned his need to expand into computerized bookkeeping. But the high start-up, personnel and training costs were not workable given the size of his business at the time.

I suggested to the CPA that Vivian could do the bookkeeping on an Epson QX-10 we had at home, providing suitable software could be found.

TOUGH REQUIREMENTS BUT AN EASY SOLUTION

According to the CPA, the software had to meet several requirements. It had to support up to 50 of his clients; have the capability for the customizing of each client's chart of accounts; have a programmable report writer to allow for customized financial statements and creating cover letters; and it had to be capable of tracking fixed asset depreciation, doing post-payroll bookkeeping and check reconciliation. In summary, the software had to do the same tasks other accountants were doing on more expensive minicomputers.

After a month of searching, we located a client write-up package from Systems Plus, Inc. One problem, however, was that Systems Plus did not support the Epson QX-10 diskette format. Several calls requesting cooperation in obtaining an Epson formatted program fell on deaf ears. But I'd located a program called Uniform by Micro Solutions (see elsewhere in this issue - *ed.*), which could read a Televideo-formatted disk and write it to an Epson format disk. The disappointing lack of support for the Epson format had been overcome.

We registered with the state of New Hampshire and opened a bookkeeping office at home. With the aid of the CPA, we set up computer records for each of his clients wanting computer services. During the client set-up process, Vivian's boss guided me through our first customized chart of accounts and formats for financial statements for each client set-up. The monthly books and financial statements would be generated by Vivian from client-supplied records, and assembled in data binders to be delivered to the CPA for his review before sending the data to the client. Vivian would charge the CPA an hourly rate for data entry, and an hourly rate for computer time and materials.

ADVANTAGES ALL AROUND

Our business is presently restricted to providing a bookkeeping service to CPAs rather than to individual business clients. A CPA with a small clientele, who cannot justify the expense of a computerized bookkeeping system, may find that farming out this service can increase productivity and profitability. It leaves more time available to do the analytical work, which is billed at higher rates than what is charged for routine bookkeeping. The extra time formerly given to clients' bookkeeping is now available for additional clients.

The CPA was also able to add his reviewing services to our charges and still pass on a bill to the client that is very competitive. The cost benefit to the client is that his bookkeeping records are being accurately and professionally maintained, and are also reviewed by his CPA each month. This provides both CPA and client with timely information on which to base business decisions.

In addition, we are able to bill our services to the CPA at lower rates than most commercial bookkeeping services, because of our low at-home office overhead. This is very important. We wouldn't have made the effort to begin the business if initially we had to rent office space and purchase a minicomputer. We also would not have attempted to jump into the bookkeeping business without the benefit of Vivian's years of experience at the job and the support of our CPA. In fact, Vivian has been able to continue working at her regular job for the CPA while bringing in additional income by working at home in the bookkeeping business.

Micro Resources is still in the cottage industry stage, but we are certainly pleased with the initial development of our new business. We are optimistic about adding a hard disk system to the QX-10, and perhaps even opening an office in Merrimack. ●

Continued from page 31

frustration. My wife Elizabeth had gotten slightly ragged dressing our rather active infant daughter for the Maine winter. It dawned on her that she could replace all the layers, the bitsy mittens, and all the rest, with a thick, loose sort of zippered bag. The bag would be sleeveless but with legs to accommodate the frame carrier and stroller. She had sewed up one of these odd-looking things, and very soon it was the only garment we used to take Jesse outdoors. Just slip her in and we were out the door. Not only was it easy but it was extra warm and comfortable. And, of course, this strange cocoon of a garment got a lot of attention. "What a good idea," people would say. "You invented it? Well, geez, you oughta go into business."

WHAT, US WORRY?

We had just bought a tiny home, were building a new structure behind it, were learning to be parents and both holding down part-time jobs. Obviously, what we needed was another project, especially one with the good possibility of blowing our little nest egg! Nevertheless, Elizabeth perfected the Baby Bag design, we applied for patent and trademark protection, and found a garment maker who'd produce a minimum order of 500 at a reasonable price. We took a deep breath, placed the order, and ran little ads in about half a dozen publications. Five of the magazines drew just a few orders, and the other did quite well.

That first winter we sold the original order and part of a second one. We hadn't made any money but we hadn't lost any, either. The product was well received by our customers, reorders were high, and we gained confidence.

The second winter we ordered more, advertized more, and sold lots more. We made money. It was a wonderful little widget business. Checks came in the mailbox, our one-color-one-size product went out the door.

TIME TO GO MODERN

But of course we had ideas. We needed a catalog. Our customers like the Baby Bag so much, they'll surely be receptive to a selection of good products for infants. But our list consisted only of the names on the old invoices. We needed a computer. Not only could it organize our mailing list, maybe it could help us with ever-growing mounds of orders, invoices, shipping manifests, accounting sheets, etc. etc. Plus, we had an in-law in the business. I took a night course in computer science, then negotiated with my brother-in-law. Soon we found ourselves sitting in front of a second-hand CP/M micro with a frightening stack of manuals attempting to explain the operating system, WordStar, and DataStar.

DataStar turned out to be a good data entry program, and we were able to get our customers keyed in, zip sorted, and printed out on labels. It was a good first database project, fairly simple, and results were good. We got our first catalog in the mail and were soon swamped with orders and the problems of multiple products in multiple sizes from multiple vendors going in multiple packages. I designed an order entry form, which at least made us look more professional, but MicroPro had not yet developed a report program to go with DataStar. I was able to work up a couple of simple BASIC programs that would extract names and addresses from the invoices and give us periodic money totals, but it took late nights and a lot of chin scratching. When MicroPro issued ReportStar we were one of the first customers and our system really began to bloom.

Meanwhile, the business was also blooming. Elizabeth and I were both nearly full-time employees of it, and had a part-time shipping clerk in the basement of our new, not-quite-finished home and offices. We had significant success wholesaling the original Baby Bag, and we were developing a unique and winning catalog style. We got a spreadsheet program and found it wonderful for organizing our books, making projections, and impressing the bank. We became nimble hands at WordStar, writing our catalogs, creating different form letters for various customer problems, and trying to impress the bank. We began fighting for computer time, and I became short-tempered with our computer's frequent disk errors and breakdowns. In short, we needed a second computer.

THE QX-10 FINDS THE NICHE

We were looking for a reliable, comfortable CP/M micro, just as the QX-10 came to market. Epson's well-known service record, the high-resolution screen, and superb keyboard all led to our purchase decision. We initially thought of Valdocs as mostly an enjoyable bonus. In fact, we found the Valdocs word processor (and print spooler) to be quite useful for such things as runs of product instructions and back order postcards, and the Draw program was a real bank impresser. Mostly, though, we used CP/M and our increasingly complex series of InfoStar programs and attendant utilities.

Smartkey allowed us to tailor the HASCI keyboard to our software and particular applications. Instead of typing "Enclose Gift Card" at the bottom of the invoice form, we had only to hit one key. A RAM disk program turned the QX-10's extra memory into an additional (and very fast) disk area. With the super utility Power we could copy files by menu, reclaim deleted files, modify WordStar menus, and in numerous other ways keep the upper hand on the operating system.

The order handling system evolved to quite a sophisticated level. A single entry screen per order produced invoices, shipping lists acceptable to UPS, MC/Visa slips, customer master lists, summaries of money totals and sales sources, as well as keeping inventory records updated and delivering new customers to the mailing list. During the busy season we were able to invoice and ship 50 to 100 orders a day with only two part-time employees. We regularly turned orders around within 24 hours, and when customers called in, we could usually tell them the status of their order within minutes. Running an efficient, low-overhead operation in sidestreet Maine, making the most of available phone and shipping services, we could charge reasonable prices and make a respectable profit.

LET'S HAVE ANOTHER

One QX-10 begat another. The mailing list grew to more than 10,000 names, packed onto four floppies. We could produce sales records, income projections, and growth charts at the blink of a bank officer. Our offices, now the little building in front of our house, began to seem small. My woodworking shop, once the corner of the basement, was buried in inventory. So, we decided to cash in the mail-order part of the business and concentrate on the wholesale part.

We placed some ads and talked to brokers. We word-processed, spreadsheeted, and pie-charted a snazzy sales presentation. I found a program from Borland International called Menu-Master with which I hid all the complicated InfoStar reports and

sorts behind a series of friendly, sometimes downright humorous, menus. Another couple, experienced in business and with a child on the way, came along hankering to run their own company out of their sheep farm in rural Maine. We struck a deal.

The mail order company today is doing a thriving business from the second story of a sheep barn, using two QX-10s and software consultation from me. My wife is running the wholesale business with her QX-10 and an InfoStar invoicing/receivables program that I designed and maintain. My own QX-10 has gathered some dust while I put the finishing touches on the house. I do some programming work, some writing, and I love to test drive new software packages. I am no longer trying to impress the bank. ●

Pat Hansen *Continued from page 32*

had over the printer. I have never gone back to the Selectric except to fill in forms or address envelopes.

THE NEXT STEP

Learning to use a text processor can be fun, but not necessarily so when relying on the manuals. I might never have finished that first job without using my husband as an "interactive" manual. But the day finally came when he was out of town and I had to use the manuals. It took a while, but I learned how to put footers at the bottom center of every page all by myself. It was like a coming of age.

Last year, I volunteered to type a monthly newsletter published by a group of volunteers in New Boston. The newsletter group owns what must be a 1920-vintage mimeograph machine, so my intention was to type the newsletter into the computer, adjust and edit it for paging and size, then retype the result on my Selectric. My husband nearly had kittens when I told him my plan. "Did you know you can cut stencils on an Epson FX-80 printer?" he demanded. "No retyping!" With this realization, I had made another step.

My business has grown to the point where I don't want any more work. I recently was talked into doing bookkeeping entry work for a local business. This involves typing checks, logging employee hours and a few other things, then running off some reports. Though I normally prefer straight typing jobs, this latest work takes only a couple hours a week with the help of my QX-10.

I still use PeachText on the QX-10 and bought a Transtar C-130 letter quality printer last year. I love this printer; it's made by Silver-Reed (it looks just like their typewriters), and takes all their ribbons and typewheels. It's smooth and quiet, and yes, it cuts beautiful stencils!

I type mostly for extra money and will never make it a full-time job, and therefore haven't tried to expand the business. But certainly, if I can get more business than I want in a town of 2,000 souls in the woods of New Hampshire by simple word-of-mouth ... well, figure it out.

My keys to success are that I am accurate and can spell. I never edit anything, but always correct spelling and really gross grammatical errors. My customers usually get one- or two-day service, but they understand my typing service is a sideline. If I have a school play to attend or have a quilting meeting, they may have to wait until tommorrow.

RATES AND THE REST

Trying to establish rates has been a problem. I have no idea what they should be. (My husband continually picks on me for being too low.) So far my rates haven't had an impact on business; it just doesn't seem to be "rate sensitive", at least in New Boston. I now charge most of my customers $8 an hour, but I am told that it should really be more in the $15 range.

I have read two books, both written by Peggy Glenn, that you might like to see if you're interested in text processing work. These are "How to Start and Run a Succesful Home Typing Business" and "Word Processing Profits at Home." The books can be purchased directly from the publisher, Ames-Allen Publishing Co., 924 Main Street, Huntington Beach, CA 92648, (714) 536-4926. Both are practical, and my experience confirms nearly everything in them. Her advice is just what I'd be looking for if I wanted to make it a full-time job. But for now, I'll keep things the way they are. ●

Joel Rose *Continued from page 32*

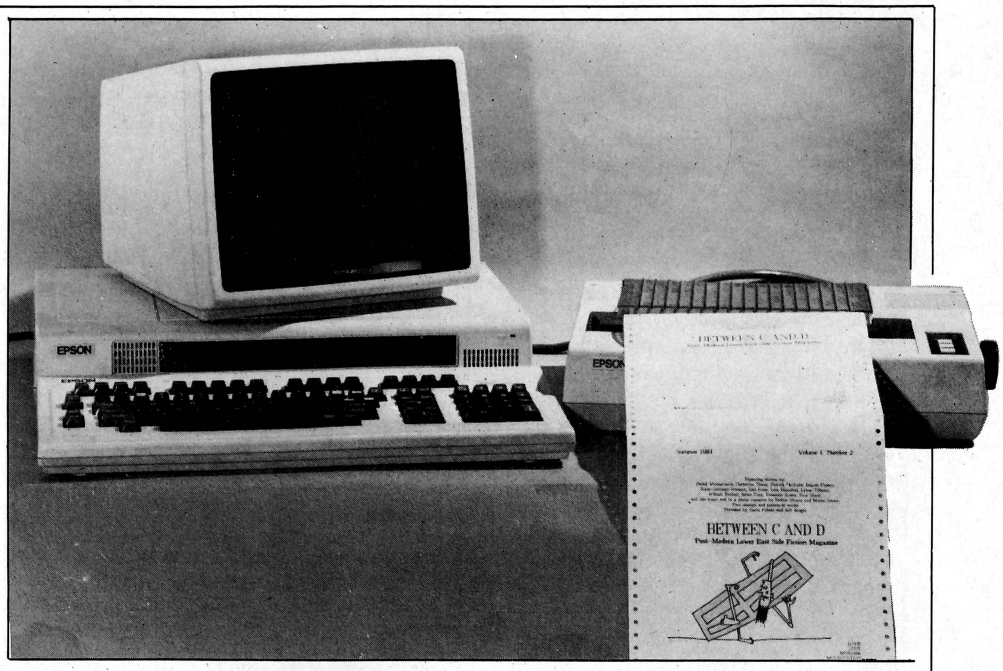
our future. We had actually decided on a Morrow Micro-Decision when we began to hear about this new computer from Epson in the early spring of 1983. Peter McWilliams had sent us an update of his Word Processing Handbook, and in it Catherine noticed a glowing report on the "sexy" QX-10. I had immediately gone out to have a look, and was astonished at what I saw. A screen that was absolutely crystal clear, so easy to read, and easy on the eyes, essential for two people who sit in front of their typewriters for sometimes up to 10 or 12 hours a day. The keyboard was first rate.

The most remarkable aspect of the Epson, we felt, was the advertised ease of use. For two people not technologically versed, the QX-10 with Valdocs seemed the perfect tool. We decided there was no comparison between it and any other machine we had seen. Catherine and I went back the next day to the computer store. A necessity was that the machine write French characters. The dealer shrugged. He wrote us a loop in BASIC that would enable our Epson FX-80 printer to make the necessary print changes, and threw in a software package called Fancy Font so we could construct our own French characters. We were convinced and plunked down the money, probably one of the best decisions of our professional careers.

Months later we had weathered the first frustrating storms of Valdocs 1.16, both of us were well into book projects, and we were cooking. Then came Celine's bout with the Wicked Witch of the East, and our lives as editors and publishers of one of the hottest literary magazines on the scene were on the way.

In the morning after my sleepless night I told Catherine of my idea — a small literary magazine that could put us in touch with some of the outstanding young writers of our generation. We could use Fancy Font for the cover, and I thought I could make a drawing on each, sort of like the ones Celine and I had so much fun making together, colorful cartoon figures with enormous hands and the vivid fingernails she loved to color. The rest of the magazine we could print in correspondence-quality Epson fonts. We loved the square readability of the dot-matrix print. At first the dot-matrix had presented a problem. My literary

agent had said forget it, letter quality was the only way to go, but when I brought in my first manuscript he voiced no protest. My publisher liked the print style, said it was so much better than most of the word processing type styles she had seen.



THE PRODUCT

Between C & D is a fiction magazine. We publish only short stories, many of the writers coming from the Lower East Side of New York City, the proving ground that spawned Alan Ginsberg, Jack Kerouac, William Burroughs, Ed Sanders, and untold others.

I foresaw a new generation of writers coming alive around our literary magazine, like the artists around the dozens of new galleries springing up in the East Village where we lived.

I imagined running off a few copies of a little cutting-edge literary publication, but Between C & D created more immediate excitement than we bargained for. Somehow the marriage of the beautifully clean, square, dot-matrix type, the colorful hand drawings, the fan-fold paper, the plastic bag we packaged it in, and the contemporary, urban, sometimes violent, sometimes sexy, tough prose we featured caught peoples' imaginations. Distributing the magazine ourselves throughout New York City, we could not believe how quickly the magazine was scarfed up by eager readers. Many bookstores sold out the very first day Between C & D hit the stands, and from the start our telephone was ringing.

Newspapers like Village Voice and the East Village Eye wrote articles. European magazines contacted us for copies, and wrote about us. We were featured in a special computer issue of the slick and trendy French magazine Actuel. Cable television contacted us, and featured the magazine in short segments on computer shows.

THE PRODUCTION

The 75 proposed copies were no longer feasible. Presently, we limit our production to 500 copies, minuscule in comparison to national magazine print runs, but a respectable circulation for a little magazine of our kind. Our 500 copies take us an entire month to make, printing 10 and 12 hours a day on our Epson QX-10s and FX-80 printers to complete an issue. Remarkably, we've never had a print breakdown or any problem in the least with our hardware. Recently Epson America has sent us an additional QX-10 computer, an LQ-1500 printer and an FX-80+ printer. I say thank you to them, long and loud, not only for their support, but for the deliverance. Each copy of Between C & D takes approximately 45 minutes to print, Catherine and I finding it difficult to squeeze in our own work.

Our fifth issue is presently in pre-production. The care put into their work by artists and photographers we've featured puts the magazine into the artbook classification. Still it is the writing that we feature that most excites us. And though one of the charms of Between C & D is the contrast between high-tech and hand-made, we think that soon we could be selling subscriptions on diskette and over modems ... maybe we could be the first literary magazine on diskette! And with the advent of Valdocs 2 and Valpaint, who knows what the future might hold, what our capabilities might become. ●

Continued from page 29

Basically, a database is a collection of separate pieces of information relating to a common subject. Each piece of information, called a record in dBase terms, has one or more items, called fields, in common with each of the other pieces in the collection.

An easy way to envision the relationships between databases, records, and fields in dBase II is to consider the automobile. The automobile, that is, as represented by a shoebox full of gasoline credit card receipts. The shoebox is the database, the receipts become records, and each item on the receipts (the date, gallons purchased, larcenous price per gallon, etc.) becomes a field. Each receipt (record) has its own receipt number. Similarly, dBase II assigns a record number to each of its records.

COMMAND FILES

As mentioned earlier, a command file is a list of instruction lines stored on the diskette as a text file; dBase II reads, interprets, and executes the instructions it finds in the Command File. For example, a series of instruction lines like:

```
ERASE
USE GAS
LIST ALL DATE
```

would tell dBase II to:

- Clear the screen,
- Open the database file named "GAS.DBF",
- List on the screen the DAT field for each record in the database.

A command file can be written with dBase II's built-in text editor, which is adequate for files of two or three pages. For longer command files, a word processor makes moving around a lot easier. It's important that the word processor not insert formatting, header, or other special characters in the command file. Check the word processor's documentation before writing a command file with it, since dBase II may not read the command file and execute the instructions if it runs across stray characters in the file. You will find that WordStar in the non-document mode or Peachtext with wordwrap and justification turned off will do the job. Nevertheless, each of the command files to be discussed here is very short and can be written easily with the dBase II editor.

Writing a command file with dBase II's editor will automatically append a ".CMD" filename extension to the command file name you are editing. For example, typing "MODIFY COMMAND B:MENU" at the Dot Prompt, and pressing the *ltReturn*gt key, will put you into the dBase II editor and create a command file named "MENU.CMD" on the B: disk drive. If you use your own word processor, be sure to add ".CMD" to your command file name.

Although the shoebox example is valid, a popular database application, the telephone directory, will provide a more familiar subject for discussing database automation.

STEP-BY-STEP

The first step is to create a telephone directory database. Get dBase II up and running on the A: drive, and place a blank, formatted data diskette in the B: drive. You should be familiar enough with dBase II to create the structure of the database, which will be named "PHONEBK". If you are unsure about this, Figure 1 represents a session

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beginning with the Dot Prompt and ending with the creation of "PHONEBK.DBF" on the B: disk drive. You can follow along using Figure 1 as a dialogue guide for creating "PHONEBK". Press the *ltReturn*gt key at the eighth field to signify no further field definitions. If you still have a question on database creation, check your dBase II documentation.

Your negative reply to "INPUT DATA NOW?" will return you to the dBase II Dot Prompt. Once "PHONEBK.BF" is created, then an index file, called "LASTNAME", is created. At the Dot Prompt, type "USE B:PHONEBK" and press the *ltReturn*gt key. Then type "INDEX ON !(LNAME)+!(FNAME) TO B:LASTNAME" and again press the *ltReturn*gt key. The program will create an index file on B: drive called "LASTNAME.NDX". (Note the automatic addition of the ".NDX" file-name extension). There is no need

Figure 1. dBase II Dialogue — Create "PHONEBK" Database

```
:IE.CREATE B:PHONEBK
ENTER RECORD STRUCTURE AS FOLLOWS:
FIELD NAME,TYPE,WIDTH,DECIMAL PLACES
001 LNAME,C,20
002 FNAME,C,15
003 ADDR,C,30
004 CITY,C,20
005 STATE,C,2
006 ZIP,C,5
007 PHONE,C,14
008

INPUT DATA NOW? N
```

Figure 2. Telephone Directory Menu Functions.

"MENU.CMD"

Choices

1. Add Records

2. Edit/Delete Records

3. Directory Listing

<Return> TO Exit

1	2	3	<Return>
GETDATA.CMD	EDITDATA.CMD	SHOWDATA.CMD	CANCEL

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to have records in the database in order to create this index file. This index will keep the "PHONBK" records in order by last name, followed by first name. This holds whether the names are entered in upper case, lower case, or a combination of both. That's what the "!(LNAME)" and !(FNAME) expressions do. The "!" expressions convert the LNAME and FNAME Fields to upper case letters before indexing them. The actual Fields in the database are not altered to do this. The FNAME Field is indexed along with the LNAME Field so that "Smith, Adam" will come before "Smith, Bill" in any listing produced.

Figure 2 is a block diagram depicting the functions of the automated telephone directory database. One or two command files will be written to do the function of each block in the diagram. The topmost block represents the starting point, or main menu. The main menu presents the choices of telephone directory functions.

The basic functions of the "PHONEBK" database are:

- Entering names, addresses and phone numbers,
- Changing or deleting some of the data from time to time,
- Retrieving and displaying the data in a format which is useful.

These will constitute three of the four choices in the main menu command file, called "MENU.CMD" (See the command file listing of "MENU.CMD", Figure 3). The fourth menu choice will be the option to exit to the Dot Prompt. Use the dBase II editor or your word processor to enter the command file lines as you see them in Figure 3.

LET'S SEE THE MAIN MENU

The main menu command file begins with the setting of certain parameters. "SET TALK OFF" prevents cluttering display screens with dBase II replies to command file statements. "SET DEFAULT TO B:" tells dBase II to search the B: drive for any database, command or index file being called. This eliminates having to prefix each called file with a "B:" in your command file. "SET BELL OFF" prevents an irritating beep each time a Field is filled up during data entry. "SET INTENSITY OFF" provides a single-intensity screen character display for menu and data entry screens. The asterisk at the beginning of a line allows for entering remarks in the command file to make it easier to read and follow. The "@ row,column SAY", "@ row,column GET" and the "READ" features of dBase II will be used to place characters at exact spots on the screen, and to allow for reading the menu choice. Finally, the database file and index file will be opened with "USE PHONEBK INDEX LASTNAME". The menu loop begins with "ERASE", which clears the screen. The menu is presented and a Choice is requested. The "SET CONFIRM OFF" eliminates having to press the *ltReturn*gt key after entering the single-character menu choice.

The main menu is placed inside an endless "DO WHILE T" loop. Thus, when you've completed one of the menu tasks, like data entry, the program flow will return to this loop and the menu presents itself again. You can then make another menu choice, or elect to exit to the Dot Prompt.

The "DO CASE" feature is used to execute one, and only one, of the four menu choices for each pass through the menu loop. Each of the first three

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Figure 3. "MENU.CMD" Command File Listing

```
* MENU.CMD
*
* Size of Menu area on screen is 37 spaces
* It includes columns 20 through 56
*
SET TALK OFF
SET DEFAULT TO B:
SET BELL OFF
SET INTENSITY OFF
USE PHONEBK INDEX LASTNAME
*
DO WHILE T
*
  ERASE
  @ 3,20 SAY "DIRECTORY"
  @ 6,20 SAY "---------- MAIN MENU ----------"
  @ 8,20 SAY " 1 - Add Records"
  @ 9,20 SAY " 2 - Edit Or Delete Records"
  @ 10,20 SAY " 3 - Directory Listing"
  @ 11,20 SAY " "
  @ 12,20 SAY " "
  @ 13,20 SAY "--------------------------------------------------"
  @ 14,20 SAY "Press <Return> key to exit"
  @ 16,20 SAY "Select"
  *
  STORE "-" TO Choice
  DO WHILE .NOT. Choice $ "123"
  STORE " " TO Choice
  SET CONFIRM OFF
  @ 16,40 GET Choice PICTURE "9"
  READ NOUPDATE
  SET CONFIRM ON
  CLEAR GETS
  ENDDO
  *
  *
  DO CASE
  *
  CASE Choice = "1"
  DO GETDATA
  *
  CAS Choice = "2"
  STORE F TO Found
  DO FINDER
  *
  IF Found
  DO EDITDATA
  ENDIF
  *
  CASE Choice = "3"
  DO SHOWDATA
  *
  CASE Choice = " "
  ERASE
  @ 12,29 SAY "Exiting to Dot Prompt."
  SET TALK ON
  USE
  CANCEL
  *
  ENDCASE
  *
  ENDDO WHILE T
  *
  * EOF ---------- MENU.CMD ----------
```


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Figure 4. "GETDATA.CMD" Command File Listing

```
* GETDATA.CMD
*
* Called by "MENU.CMD" — Choice 1
* This command file uses:
* "PHONEBK" Database and "LASTNAME" Index File.
*
* Create local variables
STORE FTO GotFname
STORE T TO Adding, Getting
STORE "  " TO Ans
STORE "  " TO MFname
STORE "  " TO MLname
* FNAME Field has 15 spaces, LNAME has 20, so variables have same
*
DO WHILE Adding
  *
  ERASE
  @ 5,15 SAY "———————————— DATA ENTRY ————————————"
  @ 7,15 SAY "Enter Information Below or Press <Return> to exit."
  @ 9,15 SAY "First Name & Initial."
  @ 10,15 SAY "Last Name....."
  @ 11,15 SAY "Street Address ....."
  @ 12,1 SAY "City ....."
  @ 13,15 SAY "State....."
  @ 14,15 SAY "Zip Code....."
  @ 15,15 SAY "Telephone Number ....."
  @ 17,15 SAY "————————————————————————————————————"
  @ 19, 0
  @ 19,15 SAY "Last Name Added: "+TRIM(MFname)+" "+MLName
  STORE "  " TO MFname
  *
  @ 9,38 GET MFname
  READ
  *
  * Check to see if <Return> key was pressed for exit
  * FNAME field has 15 spaces
  *
  IF MFname = "  "
    ERASE
    @ 12,31 SAY "Returning to Menu."
    RELEASE GotFname,MFname,MLname,Getting,Ans
    RETURN
  ELSE
    * Create a new blank Record to take data
    APPEND BLANK
    * Put the variable MFname in the FNAME field.
    REPLACE FNAME WITH MFname
    STORE T TO GotFname
  ENDIF
  *
  STORE T TO Getting
  DO WHILE Getting
    *
    IF GotFname
      *
      @ 9,38 GET FNAME
      CLEAR GETS
      STORE F TO GotFname
      * Next time thru Getting Loop will GET all Fields now.
    ELSE
      @ 9,38 GET FNAME
    ENDIF
    *
    @ 10,38 GET LNAME
    @ 11,38 GET ADDR1
    @ 12,38 GET CITY
    @ 13,38 GET STATE PICTURE "!!"
    @ 14,38 GET ZIP PICTURE "99999"
    @ 15,38 GET PHONE PICTURE "(999) 999-9999"
    READ
    STORE FNAME TO MFname
    STORE LNAME TO MLname
    *
    STORE "-" TO Ans
    *
    DO WHILE .NOT. Ans $ "YN"
```


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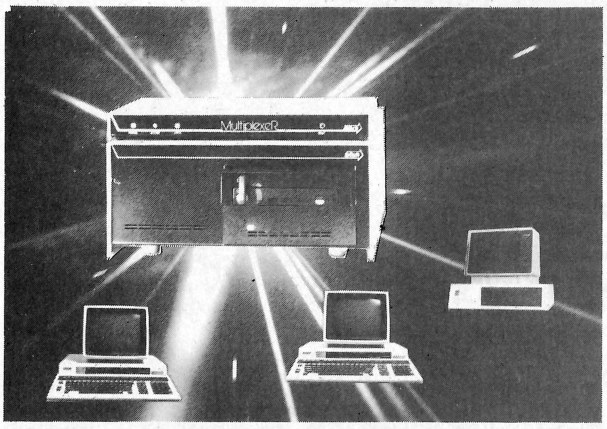

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```
  STORE " " TO Ans
  SET CONFIRM OFF
  @ 19, 0
  @ 19,25 SAY "Re-Edit This Screen? (Y/N) " GET Ans PICTURE "!"
  READ NOUPDATE
  @ 19,0
  SET CONFIRM ON
  CLEAR GETS
  ENDDO
  *
  IF Ans $ "N"
  STORE F TO Getting
  ENDIF
  *
  ENDDO while Getting
  *
ENDDO while Adding
*
* EOF ———————————— GETDATA.CMD ————————————
```

Figure 5. "FINDER.CMD" Command File Listing

```
* FINDER.CMD
*
* Called by "Choice 2" of Main Menu - (Edit or Delete Records)
*
* This command file attempts to locate a record and returns
* to the Main Menu after a successful, (Found = T), or
* unsuccessful, (Found = F), search. If (Found = T), the Record
* pointer will be at the desired record upon return to
* the Main Menu.
*
ERASE
@ 5,15 SAY "———————————— RECORD SEARCH ————————————"
@ 7,15 SAY " Enter Last Name or Press <Return> key to Exit "
@ 10,15 SAY " Search For.....:"
@ 12,15 SAY " You may enter First or more letters of Last Name "
@ 13,15 SAY " if you want to see a list of similar Last Names. "
@ 17,15 SAY "————————————————————————————————————"
STORE T TO Locating
*
DO WHILE Locating
  *
  * LNAME field has 18 spaces, so we set 'Target' to same length.
  STORE " " TO Target
  * Force the capitalization of the Last Name to comply
  * with the way it is indexed in "LASTNAME.NDX"
  @ 10,38 GET Target PICTURE "!!!!!!!!!!!!!!!!!!"
  READ NOUPDATE
  * Erase any previous 'Unable to Find.. ' message on line 15
  @ 15, 0
  *
  IF Target = " "
  * Means the operator hit <Return> key and wants to exit, so...
  STORE F TO found
  RELEASE LOCATE,Target,Max,Min,Nmbr
  ERASE
  @ 12,31 SAY "Returning To Menu."
  RETURN
  ENDIF
  *
  * Eliminate trailing spaces of Target
  *
  STORE TRIM(Target) TO Target
  *
  FIND &Target
  *
  * Two things can happen as a result of this 'FIND' command.
  * We can have a 'no-find' condition where # (for record number)
  * will be zero; or, we will have a 'find' condition where
  * # will be the record number of the record matching 'Target'.
  DO CASE
  *
  CASE # = 0
  *
  SORE F TO Found
  @ 15,15 SAY " Unable to find "+ Target + ". Try again."
  LOOP
  *
  *
```


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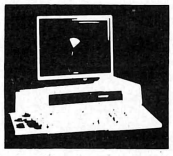

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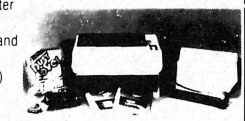

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```
CASE .NOT. # = 0
*
* Now check to see if there is more than one matching
* record on file. If there is, we must display them.
*
SKIP 1
*
* As a result of this SKIP...three things can happen...
*
* 1) We could SKIP to the next record and find
* that 'Target' will match LNAME or will have similar
* starting letters. In this case, EOF (for End of
* File) will still be False, and we will find all
* or part of 'Target' in the LNAME field. (So
* "&Target" $ LNAME will be set to True.)
*
* 2) We could SKIP to the next record and find
* that 'Target' and LNAME do not match. In this case,
* EOF will still be False, because we found a
* following record by skipping 1, but "Target'
* had no match in the LNAME field. (So
* "&Target" $ LNAME will be set to False.)
*
* 3) We could be at the last record in the file,
* in which case the 'SKIP 1' will produce the
* same record, and 'Target' will match LNAME
* but EOF will be set to True. This is the only
* one of the three possibilities where EOF will
* be set to True.
*
*
* We have already found at least one match,
* (because we are doing 'CASE .NOT. # = 0').
* Having already skipped a record ahead, we
* test for condition 1) above by saying....
*
IF $(Target,1,LEN(Target)) = $(!(LNAME),1,LEN(Target))
* A complicated statement for Novices, but it
* provides an exact letter-for-letter match.
*
*
SKIP -1
ERASE
@ 1,10 SAY "Search has produced similar records."
?
? "dBase # Deleted Name"
?
STORE 0 TO Count
*
* Display the matching records on screen.
* Store the highest record # to Max
* Store the lowest record # to Min
* Keep count, and skip back to first record.
*
STORE # TO Max,Min
DO WHILE $(Target,1,LEN(Target)) = $(!(LNAME),1,LEN(Target))
*
* See if record is marked for deletion (*)
IF *
STORE "Y" TO Del
ELSE
STORE "N" TO Del
ENDIF
*
? STR(#,5)+" "+Del+" "+TRIM(FNAME)+" "+LNAME
STORE Count+1 TO Count
IF # > Max
STORE # TO Max
ELSE
IF # < Min
STORE # TO Min
```

```
ENDIF
ENDIF
*
*
SKIP
ENDDO
*
SKIP - Count
?
* You can enter any number between the highest displayed
* and lowest displayed, not just those on screen.
*
STORE T TO Getting
DO WHILE Getting
*
STORE F TO Getting
@ 20,0
INPUT " Type in the dBaseII Record Number you want ";
TO Nmbr
*
IF Nmbr < Min .OR. Nmbr > Max
STORE T TO Getting
@ 22,54 SAY " "
ENDIF
*
ENDDO While getting
*
GOTO Nmbr
*
ELSE
*
* If the above condition was not met, we then test
* for condition 2), which is the condition where we
* have skipped to the next record and found no LNAME
* match.
*
* So we say.....
*
IF .NOT. $(Target,1,LEN(Target)) = $(!(LNAME),1,LEN(Target))
*
* We want to forget about this record and
* skip back a record to where we came from.
SKIP -1
ENDIF
*
ENDIF ———————— $(Target,1,LEN(Target)) = $(!(LNAME),1,LEN(Target))
*
* If neither the 'IF' nor the 'ELSE' above were satisfied,
* then we must be at the last record in the file.
* Condition 3) above is the only one that sets the EOF
* to True, and since we are at the record we were searching
* for, we don't need to SKIP -1. So we do nothing special
* for Condition ).
* Having found our record, or selected it from a list of
* similar records, we prepare to exit this command file
* with the following steps ...
*
ERASE
@ 12,25 SAY "Locating Record—Please Wait."
STORE T TO found
STORE # TO Num
RELEASE Target,Getting,Nmbr
STORE F TO Locating
*
ENDCASE
*
ENDDO ———————————————— while Locating
*
RETURN
*
* EOF ———————————— FINDER.CMD ————————————
```


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Figure 6. "EDITDATA.CMD" Command File Listing

```
* EDITDATA.CMD
*
* Called by "Choice 2" of Main Menu after a record has
* been found by "FINDER.CMD"
*
* This Comand File allows editing or deleting the selected
* record, and allows "scanning" forward and back through
* the database.
*
ERASE
 3,15 SAY "———————————— DATA EDITING ————————————"
@ 9,15 SAY "First Name & Initial."
@ 10,15 SAY "Last Name ....."
@ 11,15 SAY "Street Address....."
@ 12,15 SAY "City ....."
@ 13,15 SAY "State ....."
@ 14,15 SAY "Zip Code ....."
@ 15,15 SAY "Telephone Number....."
@ 17,15 SAY "————————————————————————————————————————"
@ 18,15 SAY " Press <Return> key to exit"
STORE F TO OKtoEdit
STORE T TO Inloop
*
DO WHILE Inloop
  *
  IF .NOT. OKtoEdit
  *
  @ 9,39 GET FNAME
  @ 10,39 GET LNAME
  @ 11,39 GET ADDR1
  @ 12,39 GET CITY
  @ 13,39 GET STATE PICTURE "!!"
  @ 14,39 GET ZIP PICTURE "99999"
  @ 15,39 GET PHONE PICTURE "(999) 999-9999"
  CLEAR GETS
  *
  IF *
  @ 5,15 SAY "This Record Is Marked For Deletion"
  ELSE
  @ 5, 0
  ENDIF
  *
  ELSE
  *
  @ 9,39 GET FNAME
  @ 10,39 GET LNAME
  @ 11,39 GET ADDR1
  @ 12,3 GET CITY
  @ 13,39 GET STATE PICTURE "!!"
  @ 14,39 GET ZIP PICTURE "99999"
  @ 15,39 GET PHONE PICTURE "(999) 999-9999"
  *
  IF *
  @ 5,15 SAY "This Record Is Marked For Deletion"
  ELSE
  @ 5, 0
  ENDIF
  *
  READ
  *
  ENDIF
  *
  STORE "-" TO Ans
  DO WHILE .NOT. Ans $ "EDUNP "
  STORE " " TO Ans
  @ 7,0
  @ 20,0
  @ 20,15 SAY "<E>dit <D>elete <U>ndelete <N>ext <P>revious " ;
  GET Ans PICTURE "!"
  SET CONFIRM OFF
  READ NOUPDATE
  SET CONFIRM ON
  ENDDO
  *
  IF end = " "
  ERASE
  @ 12,31 SAY "Returning o Menu."
  STORE F TO Display
  LOOP
  ENDIF
  *
  IF mode = "S"
```

```
ERASE
? "Use 'Control-S' to start & stop Display."
? "Press any key to begin display."
* Disable any display of console input or output
SET CONSOLE OFF
WAIT
SET CONSOLE ON
ERASE
REPORT FORM DIRECTRY FOR (LNAME >=start .AND. LNAME <= end)
?
? "Press Any Key For Previous Screen."
SET CONSOLE OFF
WAIT
SET CONSOLE ON
ERASE
ENDIF
*
IF mode = "P"
@ 6,20 SAY "---------- PRINT THE DIRECTORY LIST ----------"
@ 8,20 SAY " "
@ 9,20 SAY " Make Sure Printer is On and Ready "
@ 10,20 SAY " "
@ 11,20 SAY " Then Press Key 'P' For A Printout "
@ 12,20 SAY " "
STORE "-" TO Print
*
DO WHILE .NOT. Print $ "P "
STORE " " TO Print
@ 16,40 GET PrintPICTURE "!"
SET CONFIRM OFF
READ NOUPDATE
SET CONFIRM ON
CLEAR GETS
ENDDO
*
IF Print = " "
ERASE
@ 12,31 SAY "Returning To Menu."
STORE F TO Display
LOOP
ENDIF
*
* Disable any display of console input or output
SET CONSOLE OFF
* Disable the leading page eject at the printer
SET EJECT OFF
@ 9,20 SAY " "
@ 10,20 SAY "---------- Printing Directory Listing ----------"
@ 11,20 SAY " "
REPORT FORM DIRECTRY TO PRINT FOR (LNAME>=start .AND.
  LNAME<=end)
SET PRINT ON
EJECT
SET PRINT OFF
SET CONSOLE ON
*
ENDIF ---------- for mode = "P"
*
ENDDO while Display
*
RELEASE Display,mode,start,end,Print
RETURN
*
* EOF ---------- SHOWDATA.CMD ----------
```

Figure 7. dBase II Dialogue — Creating The Directory Form.

```
.USE B:PHONEBK
.REPORT FORM B:DIRECTORY
ENTER OPTIONS, M=LEFT MARGIN, L=LINES/PAGE, W=PAGE WIDTH
  M=5,W=70
PAGE HEADING? (Y/N) Y
ENTER PAGE HEADING: TELEPHONE DIRECTORY
DOUBLE SPACE REPORT? (Y/N) N
ARE TOTALS REQUIRED? (Y/N) N
COL WIDTH,CONTENTS
001 19,LNAME + " " + FNAME
ENTER HEADING: NAME
002 18,PHONE, + " "
ENTER HEADING: TELEPHONE
003 30,ADDR1 + TRIM(CITY) + " " + STATE + " " + ZIP
ENTER HEADING: ADDRESS
004
```

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CASES calls for the running of one or more command files. The "STORE" command creates a variable; in this case, the variable is a logical one called "Found".

The "DO WHILE .NOT. Choice $ '123 " ' statement is an additional, optional control over the Choice entry. This loop prevents a choice like "8" causing the "DO WHILE T" loop to redisplay the entire menu screen just because "8" didn't satisfy any of the four cases. This smaller loop is telling the program to continue asking for a choice until that choice is a 1, 2, 3, or a space character. In order to get inside this loop for obtaining a menu choice, the Choice variable must be something other than 1, 2, 3, or the space character. So initially, it is made equal to an arbitrary character, a hyphen in this case. Immediately inside the loop, Choice is made equal to the space character.

Now the "GET Choice" expression presents a blank space on the screen rather than the hyphen. At the "READ" statement, the *ltReturn*gt key can be pressed to accept Choice as a blank space to exit the menu, or Choice can be entered as a number. The "PICTURE "9"" clause further requires any character typed in for Choice to be a numeric character. The "NOUPDATE", used with the "READ" statement (dBase Version 2.4 and later) tells dBase II not to update the "LASTNAME" index file for what is currently being "READ". No one's first or last name is being entered or changed at this time, so an index file update is not required. The "CLEAR GETS" statement is necessary inside loops because dBase II limits the number of accumulated "GETS" to 64.

If someone were bored enough to continue entering non-valid menu choices inside the smaller loop until 64 "GETS" were accumulated, the next "GET" would cause dBase II to stop operating right in the middle of the command file!

The fourth choice on the menu closes the database and index files with the simple statement "USE", then returns to the Dot Prompt with the "CANCEL" command. To see the display of the menu, type "DO B:MENU" at the Dot Prompt, and press the *ltReturn*gt key. Or if you're at the "A*gt" prompt, you can type "DBASE B:MENU" and press the *ltReturn*gt key. Of course, at this time, selecting choices 1 through 3 from the displayed menu will produce a dBase II error message because the command files for the other choices

have yet to be written.

SEE THE DATA. GET THE DATA.

The next command file is called "GETDATA.CMD". It facilitates getting data into the "PHONEBK" database using a nicer looking data entry screen, and is called by Choice 1 of the main menu. Figure 4 contains the "GETDATA.CMD" command file lines. Type them as they are shown. This command file uses the entry response to the first field on the screen as a test of whether or not to continue data entry. Most of the other expressions used are similar to those used in the main menu command file.

Choice 2 from the main menu begins by calling the command file "FINDER.CMD", which locates the first reord in the database that satisfies the Last Name "Search" entry provided by the user. If a record or records are found, the program goes on to the command file "EDITDATA.CMD". Otherwise, an advisory message indicating no record was found is displayed along with the opportunity to try a different "Search" entry. Use Figure 5 as your guide to writing "FINDER.CMD". This command file uses extensive comments because it is the most complicated of the five command files discused. Once you have it running, you can compress the size of this file by eliminating the comment lines.

Once you have "FINDER.CMD" in your disk, you can type in "EDITDATA.CMD" using Figure 6 as an example.

The final command file is called "SHOWDATA.CMD". It permits listing the telephone directory on the screen or the printer. Before typing in "SHOWDATA.CMD", you will create a "form file". A form file is another text file on the disk with a file extension of "FRM". It is created at the dBase II prompt by the statement: "REPORT FORM B:DIRECTRY". Figure 7 is your guide to creating this file. It represents the dialogue that occurs between you and dBase II while creating the file "DRECTRY.FRM". Type *ltReturn*gt at column 004 to indicate no further columns.

Now, with the Form used by "SHOWDATA.CMD" to display the addresses, you can write this last command file. See Figure 8.

This completes the tutorial on writing dBase II command files. A good sampling of dBase II expressions and commands have been illustrated, which

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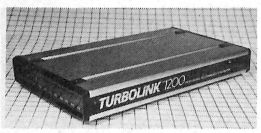

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should give the novice programmer a sound basis from which to develop dBase II skills. Should you not be inclined to do the considerable amount of text entry to create your own telephone directory system, you can obtain a diskette containing all the telephone directory command files, the database and index files, and the form file all ready to run. The price for the diskette is $15.00. For a copy, just send a check or money order to Bob Loranger, 5 Vista Way, Merrimack, NH 03054. Ask for the "PHONEBK" disk, and it will be sent within five days. ●

Figure 8. "SHOWDATA.CMD" Command File Listing

```
* SHOWDATA.CMD
*
* Allows alphabetical selection of a range of records
* for display either screen or printer
*
* Calledby Choice 3 of Main Menu
*
* Local variables declared
STORE "  " TO mode,start,end,Print
*
STORE T TO Display
*
DO WHILE Display
  *
  @ 3,20
  @ 6,20 SAY "---------- DISPLAY THE DIRECTORY LIST ----------"
  @ 8,20 SAY " 1 - Type 'S' For Screen Display "
  @ 9,20 SAY " 2 - Type 'P' For Printed List "
  @ 10,20 SAY "  "
  @ 11,20 SAY "  "
  @ 12,20 SAY "  "
  @ 13,20 SAY "------------------------------------------------------------"
  @ 14,20 SAY " Press <Return> key to exit "
  @ 16,20 SAY " Select:"
  STORE "-" TO mode
  *
  DO WHILE .NOT. mode $ "PS "
  STORE "  " TO mode
  @ 16,40 GET mode PICTURE "!"
  SET CONFIRM OFF
  READ NOUPDATE
  SET CONFIRM ON
  CLEAR GETS
  ENDDO
  *
  IF mode = "  "
  STORE F TO Display
  LOOP
  ENDIF
  *
  STORE "  " TO start
  @ 11,26 SAY "Enter Starting Letter "
  @ 12,26 SAY "Enter Ending Letter "
  @ 11,48 GET start PICTURE "!"
  SET CONFIRM OFF
  READ NOUPDATE
  SET CONFIRM ON
  *
  IF start = "  "
  ERASE
  @ 12,31 SAY "Returning To Menu."
  STORE F TO Display
  LOOP
  ENDIF
  *
  STORE "  " TO end
  *
  DO WHILE end < start
  STORE "  " TO end
  @ 12,48 GET end PICTURE "!"
  SET CONFIRM OFF
  READ NOUPDATE
  SET CONFIRM ON
  CLEAR GETS
  ENDDO
  *
  IF Ans = "  "
  STORE F TO Inloop
  ERASE
  @ 12,31 SAY "Returning to Menu."
  ENDIF
  *
  *
  DO CASE
  *
  CASE Ans = "E"
  *
  @ 7,15 SAY "Make Changes As Required Below"
  STORE T TO OKtoEdit
  *
  CASE Ans = "D"
  *
  DELETE
  STORE F TO OKtoEdit
  @ 5,15 SAY "This Record Is Marked For Deletion"
  *
  CASE Ans = "U"
  *
  RECALL
  @ 5,0
  STORE F TO OKtoEdit
  *
  CASE Ans = "N"
  SKIP
  *
  IF EOF
  @ 6,0
  @ 6,15 SAY "At End of File"
  ELSE
  @ 6,0
  ENDIF
  *
  STORE F TO OKtoEdit
  *
  CASE Ans = "P"
  STORE LNAME+FNAME TO mname
  SKIP -1
  *
  * Not a 100% test for BOF, but very close.
  IF LNAME+FNAME = mname
  @ 6,0
  @ 6,15 SAY "At Beginning of File"
  ELSE
  STORE LNAME+FNAME TO mname
  @ 6,0
  ENDIF ---------- LNAME+FNAME = mname
  *
  STORE F TO OKtoEdit
  *
  ENDCASE
  *
ENDDO ---------- WHILE Inloop
*
RETURN
*
* EOF ---------- EDITDATA.CMD ----------
```

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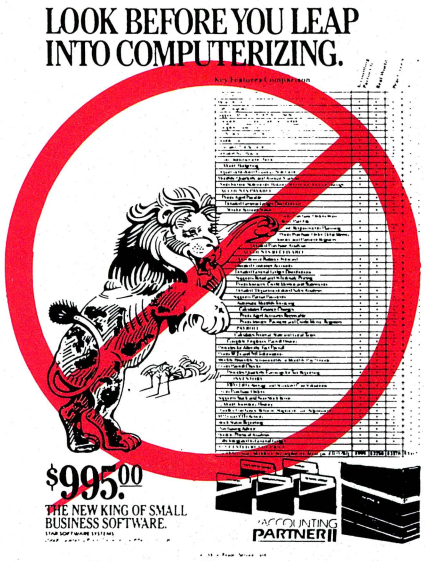

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Circle 4 on Reader Service Card

Continued from page 36
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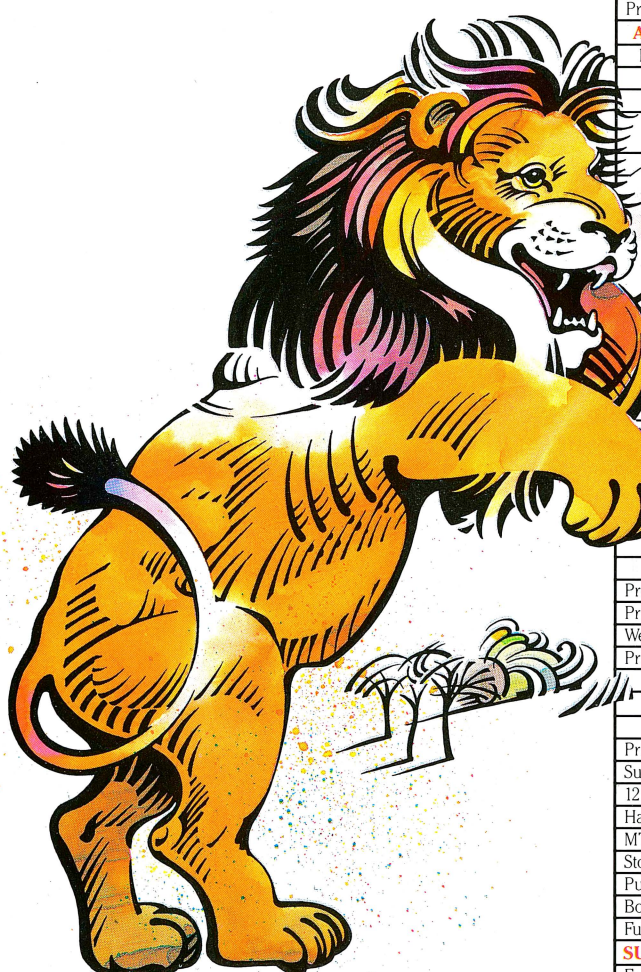

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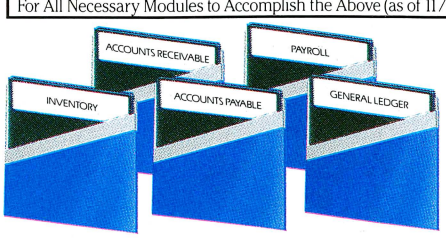

THE ACCOUNTING PARTNER II

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FUTURE INTELLIGENCE

The Cognitive Computer, by Roger C. Schank and Peter G. Childers
Addison-Wesley Publishing Company, 1984
268 pages, hardbound: $17.95

Artificial Intelligence (also known as AI) is the latest craze in the computer community. What is artificial intelligence? For our purposes, it is a computer processing capability that in some ways mimics the way you and I think, communicate and make decisions.

Authors Roger Schank and Peter Childers, both of Yale, have put together a fascinating book that explains AI (it will radically change our "human-computer" relationship), gives a history of AI development, describing the many pitfalls that AI researchers have fallen into, and concludes with glimpses into the future and how artificial intelligence will eventually influence our lives.

The book is written in a "comfortable" style, and is uncommonly free of complex buzz words and jargon. It provides a good background reference on AI development in the United States, and gives a candid view of the effects of and implications of AI as it will evolve in our society during the information age.

STUPID COMPUTER!

I was particularly fascinated with descriptions of language experiments conducted by artifical intelligence researchers when the problems of human linguistics were starting to be analyzed. Human (or "natural") language is confusing and full of ambiguities. Consider the following sentences:

1. John gave Mary a book.
2. John gave Mary a hard time.

All of us easily understand the meanings of these sentences, but early computer programs tackling them produced amusing results. If we wanted the computer to infer that Mary now possesses a book when it sees the word "gave," all it need do is find the direct and indirect objects in a sentence with "gave" and slap the words "now possesses" between them:

Mary now possesses a book.

But of course if the second sentence is treated the same way:

Mary now possesses a hard time.

Clearly there is more to the problem of "natural language processing" than simply analyzing sentence structure. Schank describes the development of several large AI programs involving human understanding in terms that will both educate and entertain.

UNREALIZED BENEFITS, REALIZED PITFALLS

Several chapters are devoted to exploring the benefits of AI research. Large databases will eventually be accessible by ordinary people, although not without cost. The concept of the "free" public library may eventually disappear, but most of mankind's knowledge will be available via your telecommunicating computer using English. No more manuals, control codes and the like.

As seen by Schank, the impact of AI on our future lives goes far deeper than simply "making computers smarter." AI modeling programs that analyze social behavior, economic patterns, weather, toxic waste dispersal and nearly anything else you can imagine are becoming hot-ticket items, sold by a growing consortium of AI software companies. The opportunities for the misuse of these programs and the data produced by them, if left unchecked, can result in serious sociological problems for our civilization, the authors point out.

Perhaps this warning is the single most important message contained in the book. Access to information, a prime and direct result of AI application, is a powerful thing. We face a clear and present danger if we let our freedoms and privacy be diminished over a period of time by our own politicians, political institutions and corporations.

This is a book well worth the price.

There's Something Free in This One

The Free Software Handbook by Platt, Hatcher and Vanmeter
Peopletalk Associates, Inc.
PO Box 863652
Plano, Texas 75086
(214) 423-4634
342 pages, softbound, $17.95

There's no such thing as a free lunch! Free software isn't worth the disk it's recorded on! These are some of the thoughts that come to mind when discussing "public domain" software which is often passed around at user group meetings and posted on bulletin boards.

And you're right ... there are problems with a lot of the free software floating around. Some of it is downright trivial, useless or uncomprehensible, but there are some real gems scattered in the gravel, and that is where this book comes in. The author sifted through countless public domain programs, selected and tested 70 of the best, then wrote documentation for them. The result is a 342-page book that is worth its weight in gold. Better still, all the programs described in the book are available in a disk collection in the QX-10/16 format for a very nominal charge. More on this in a minute.

The programs described in the Free Software Handbook include games, business packages and heavy duty "hacking" software. There's something in the collection for everybody. Each program was chosen on the basis of ease of use, functionality and general utility. The authors did the job well; there isn't a dud in the lot.

Continued from page 23

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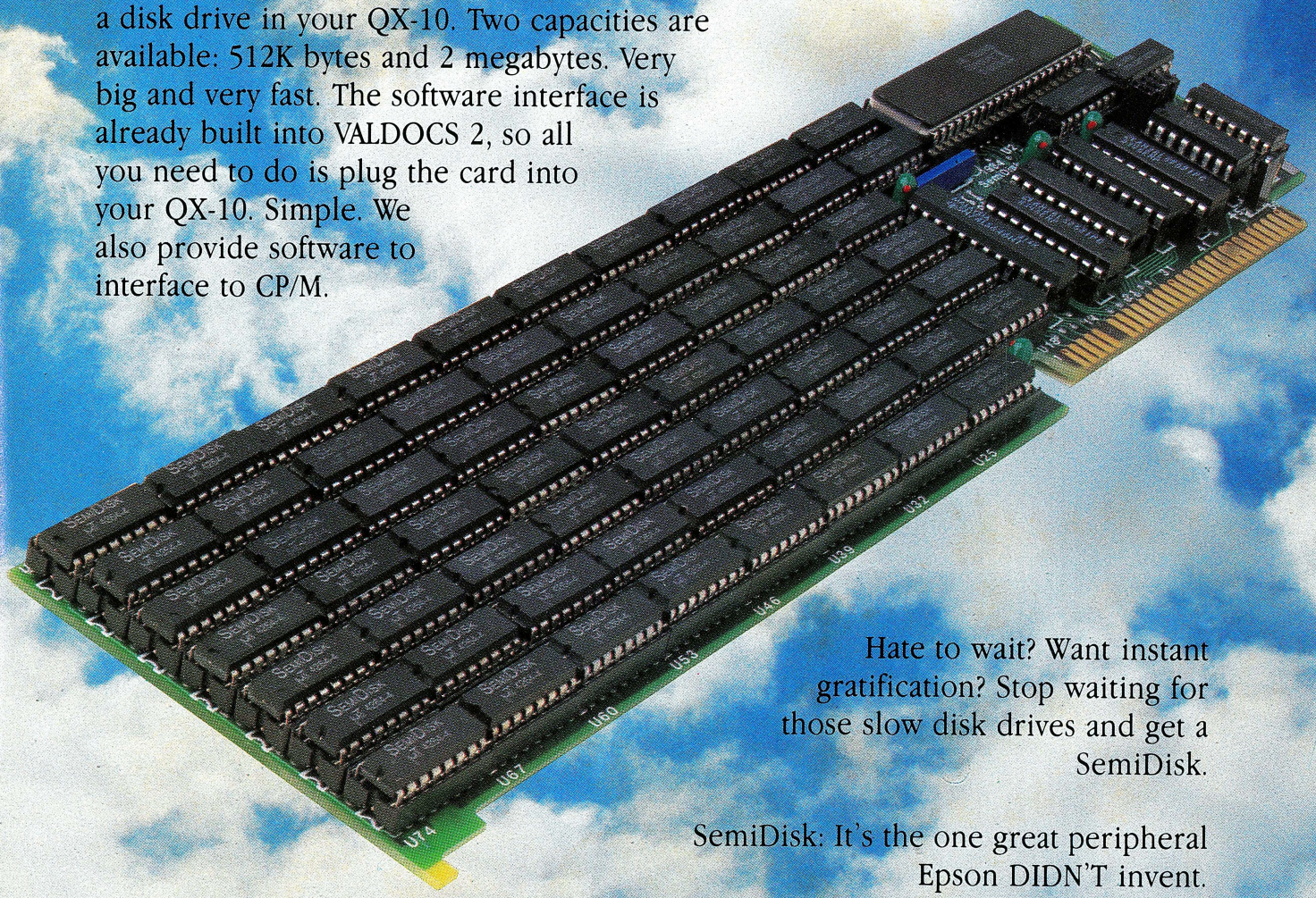

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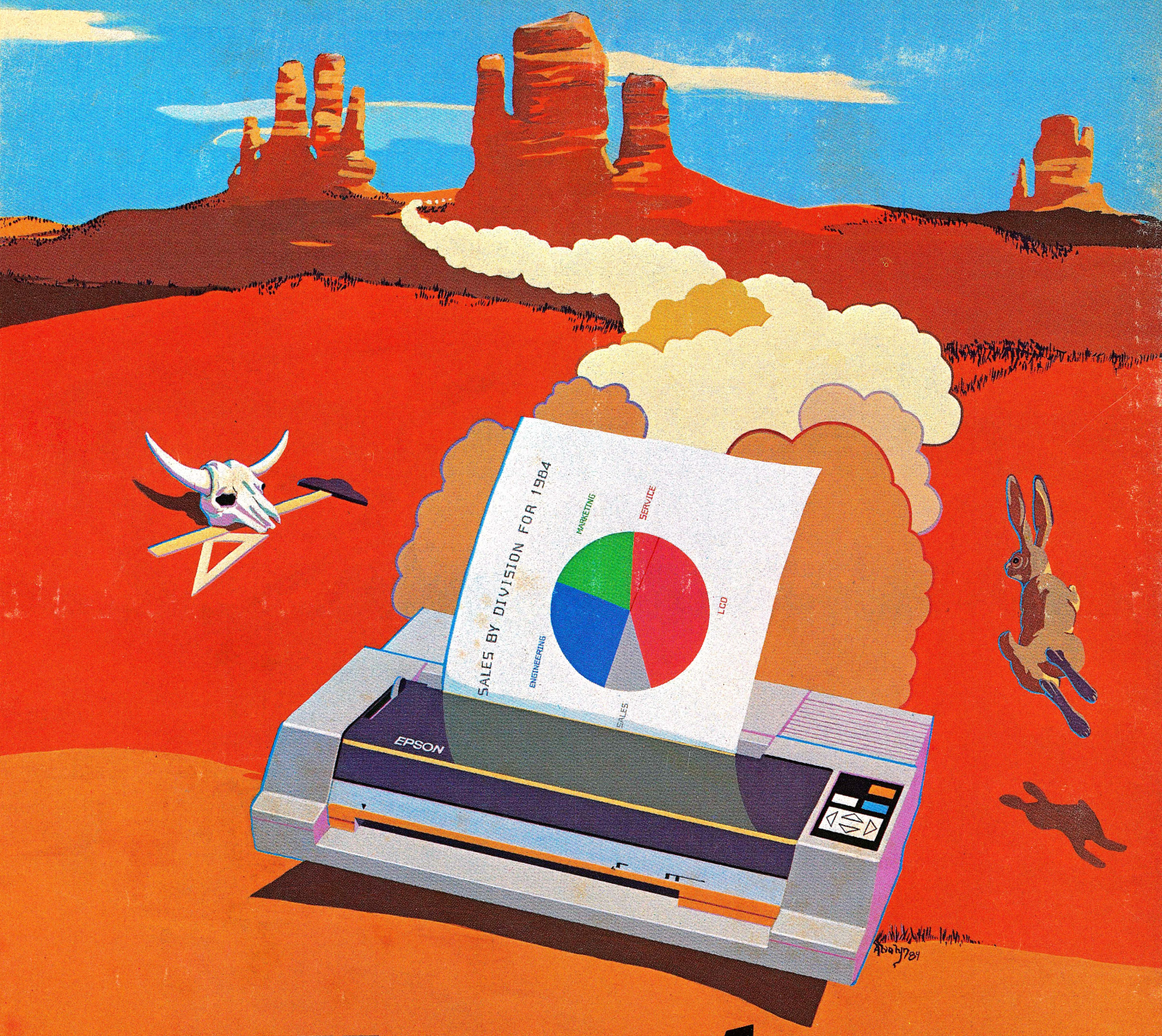

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